Investigating the Deployment of Electronic Customer Relationship Management Readiness and Maturity Models in the Iranian Banking Industry

A thesis submitted for the degree of Doctor of Philosophy

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Abstract

Customer Relationship Management (CRM) is one of the main priorities for almost all organisations, particularly in the banking world. However, Information technology (IT) has changed ways of interacting with customers, resulting in the appearance of the concept of Electronic Customer Relationship Management (eCRM), which has caused a shift from offline CRM to eCRM. ECRM aims to attract and retain customers (especially valuable ones), to improve customer service by creating a strong relationship with them, and to provide the required financial product at the right time. Thus, it is vital to identify readiness factors in any organisation to prevent eCRM failure.

Due to the current gap in the eCRM readiness and maturity assessment area in banks, this research attempts to fill this gap by developing a conceptual framework for eCRM readiness/maturity and accordingly create a tool for banks to assess their eCRM readiness and maturity. This tool helps banks to prevent any eCRM failure before and after implementation which is an essential concern for any organisation in order to gain competitive advantages. In addition to practical implications, the present study contributed to existing literature. This study contributed to the current understanding of eCRM readiness and maturity in banks and helps decision makers to assess their eCRM.

This study explores the social and technical aspects of eCRM in the Iranian banking industry. Hence, a pragmatic research approach using mixed methods with a range of stakeholders, such as employees, and managers, was employed in this research. As the purpose of this research is to identify the main eCRM readiness dimensions in Iranian banks and to assess eCRM readiness and maturity, an eCRM readiness/maturity framework was developed. The proposed framework was tested by devising and distributing a structured questionnaire and conducting a semi-structured interview in an attempt to survey a large number of bank employees, and decision makers at five different and well-known private and state banks in Tehran, the capital city of Iran. This survey provides an excellent penetrating study of the Iranian banking industry.

Regarding eCRM readiness, data collected from a quantitative approach was analysed statistically using the Software Package for the Social Sciences (SPSS). The qualitative data was interpreted using NVivo, which is a qualitative data analysis computer software package. Findings from the triangulation of data of qualitative and quantitative approaches were evaluated in order to determine the main eCRM readiness dimensions in Iranian banks.

Furthermore, from these findings, a case study bank was assessed in regarding eCRM readiness using Analytical Hierarchy Process (AHP).

Regarding assessing eCRM maturity, an eCRM maturity model was developed, and a case study bank was selected. Based on the proposed eCRM maturity model, the maturity level of the selected bank was assessed using RADAR logic approach. In addition, this model was based on critical success factors (CSFs) and adapting the CRM3 maturity model.

The findings of the empirical research were evaluated against the initial framework, which was generated by integrating the proposed models for eCRM readiness and maturity. This framework consists of three dimensions for eCRM readiness (Organisational culture, corporate strategy, technology) and five level of maturity. Dimensions, factors, and levels in this framework were derived from a literature review. Finally, a revised framework was generated and based on stakeholder's perceptions, a conclusion was derived, and a recommendation to Iranian banks was made. An eCRM readiness/maturity assessment tool was created to help banks to determine whether they are ready or mature enough for the use of eCRM. The result from this assessment tool can be easily communicated amongst key members, which would help the Iranian banks to improve and promote their eCRM. In addition, this study attempts to fill the current gap in assessing banks eCRM readiness and maturity.

Statement of copyright

Declaration

The work described in this thesis has not been previously submitted for a degree in this or any other university, and unless otherwise referenced it is the author's work.

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Publications

1. Tahmasebi Aria, Farzad and Dafoulas, George and Alotaibi, Basma (2015) 'The role of Web 2.0 technologies in higher education: a case of teaching customer relationship management concepts' 7th International Conference on Education and New Learning Technologies, Barcelona, Spain, 6-8 July. Available at: https://library.iated.org/view/ARIA2015INV.

2. Tahmasebi Aria, Farzad and Dafoulas, George and Shokri, Azam (2015) 'Investigating the impact of social customer relationship management in higher education' 8thInternational Conference of Education, Research and Innovation (ICERI2015), Seville, Spain, 18-20 Nov. Available at: https://library.iated.org/view/ARIA2015ROL.

3. Tahmasebi Aria, Farzad (2015) 'Investigating the factors affecting eCRM success in the banking industry' Middlesex Research Students' Summer Conference (RSSC), Middlesex university, London, UK, 17-18 June.

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Chapter 1

Introduction

Chapter 1

1.1 Introduction

CRM can be seen as a combination of people, processes and technology which emphasises on initiating, maintaining and retaining a strong, long-term relationship with customers in order to fulfil organisation goals and objectives. CRM helps for building individual relationships with customers based on their needs and behaviours in order to gain their loyalty. However, CRM has been defined in relevant literature by many researchers, and it is observed to have different meanings for different people and different organisations. The purpose of this chapter is to discuss the background, the problem and to outline the aim and objectives of this research which is an eCRM readiness and maturity assessment in banks. Moreover, the methods used in this research, along with the research process and its contribution to knowledge, are discussed. The objectives of this chapter are as follows:

- Introduce and provide a context for the thesis.
- Describe the eCRM background and motivation of the research.
- Describe and discuss the problem being addressed by the research.
- Outline the aim and objectives of the thesis.
- Present the contribution to knowledge of the research.
- Present the methodology of the research.
- Provide the thesis structure.

1.2 Background

CRM has grown rapidly since 1999 (Buttle, 2009) and is a widely discussed topic in today's society. The main reason for this is the shift of organisations from being product-oriented to customer-oriented. Nowadays, there is motivation in businesses to adopt CRM initiatives in order to create a long-term relationship with their customers and to help organisations to obtain more customers in order to achieve a higher return on investment. Developing and maintaining relationships with customers is a crucial step that helps organisations to be successful in achieving competitive advantages.

The emergence of the Internet and other information technologies means that these factors form a significant part of an organisation's quest for success. In other words, the Internet is a powerful tool for the promotion of products or services, as well as for enhancing and maintaining long-term relationships with customers which can lead to greater customer loyalty, customer retention and improved profitability (Kennedy & King, 2004; Karakostas et al., 2005). The rapid growth of the Internet and its associated technologies have dramatically increased the opportunities for marketing and has transformed the way relationships between companies and their customers are managed. The success of e-business depends on a list of factors, in which customer relationship lies at the forefront. Hence, it is clear that the Internet has created an unprecedented level of engagement between customers and businesses.

As discussed above, with the emergence of the Internet and the exponential growth of electronic communication, the world has witnessed the development of a new communication society. Following technological advancements, many opportunities have been created for establishing good long-term relationships with customers, which can be pursued through electronic customer relationship management (eCRM) (Yazdanpanah & Gazor, 2012). ECRM creates and establishes a more friendly and suitable relationship with customers by improving customer service through the use of Internet technologies and their integration with organisational CRM strategies (Fjermestad & Romano, 2003).

Nowadays, customers are important assets for any organisation, including those in the banking sector. In recent decades, banking services have grown substantially and, like other organisations, have started to shift from being product-oriented to customer-oriented. With this rapid growth in world banking, developing countries must prepare themselves to be able to keep up with these changes. In order to have efficient communication with customers, organisations, including banks, need to devise strategies aimed at increasing profits and revenues, as well as delivering satisfaction for and loyalty to their customers, which can be achieved by eCRM.

ECRM has become the primary paradigm of relationship marketing in the e-world (Chen & Chen, 2004) and banks have become more efficient in developing such relationships that use Internet technology. ECRM enables financial institutions to provide the right financial product at the right time. In addition, it allows them to attain customisation of their delivery, which is the essence of a customer-centric organisation (Stefanou, 2003). Success in the implementation of eCRM has a variety of benefits to banks, employees and customers. However, a survey by

Merkle (2013), a leading customer relationship management firm, has revealed how eCRM success rates are still too low, as about 63% fail. According to the literature (Eid, 2007; Chen & Chen, 2004; Wilson et al., 2002), there are several reasons behind this failure, ranging from poor strategy to lack of IT infrastructure, which will be discussed later. In the next section, the idea of conducting this research is discussed in terms of the clarification of the problem in the focal context.

1.3 The problem

As already mentioned, eCRM implementation has many different benefits for customers, employees and businesses but despite its increased use, there is a very high rate of eCRM failure. Rates of 56% (Economist Intelligence Unit, 2007), 47% (Forrester, 2009) and 63% (Merkle, 2013) have been attributed to weaknesses in its processes, technology, strategy and human error, all of which need to be investigated. Therefore, businesses must seek to overcome these barriers by identifying and assessing the crucial factors for eCRM readiness before its deployment. They need continuously to determine the level of eCRM maturity in order to forge deeper relationships with customers and, thus, survive in competitive markets. Furthermore, to achieve the full potential of eCRM, critical success factors (CSFs) should be implemented holistically rather than piecemeal.

One type of organisation that has realised the importance of eCRM implementation is financial institutions, such as banks (Priya & Eswaran, 2016). Banks have an essential role in the economy of countries and, due to their high exposure with customers, eCRM should be deployed and developed wisely. ECRM in today's world is a vital part of all banking operations, which enables them to streamline marketing, decrease costs, increase revenue, and most importantly, increase customer satisfaction and loyalty.

Reasons for eCRM failure include absence of a well-defined strategy (Chen and Popovich, 2003; Greenberg, 2009), lack of an accurate definition (Ramsy, 2003), inability to be a customer-centric organisation (Merkle, 2014), lack of executive leadership (Ramsy, 2003), poor IT infrastructure (Chen and Chen, 2004), absence of a system of integration (Foss et al., 2008; Ward, 2001), lack of training (Baird & Parasnis, 2011; Liu, 2007), weak management support (Nguyen et al., 2007), and employees' resistance to change (Shum et al., 2008; Xu et al., 2002). If these factors raised in the literature were successfully addressed, then a firm would be able to reap the benefits of eCRM, and this would contribute exceptional economic value to them. In summary, given that many firms have failed to implement eCRM successively owing

to combinations the above issues, it is essential that research solutions are found about matters that are tailored to the different types of businesses, with particular focus in this thesis on banks.

According to Nejadirani et al. (2011), most CRM researches have been conducted in the west, and thus there is an apparent gap in the developing countries context in this respect. Most of the literature has focused only on the marketing or technical aspects of eCRM, and there has been little work that assesses eCRM readiness and maturity, which can prevent business failure. Hence, there is a need for an integrated framework that can evaluate these aspects and consequently be able to guide banks on how to roll out eCRM effectively. This is vital for any customer-oriented bank.

Iran is a developing country and has a large number of banking institutions (comprising more than 60 in total), including commercial government-owned, specialised government-owned, non-government-owned, and other investment institutions, while also there are foreign banks. In recent years, the banking industry has entered a new era. The main reason for this evolution is the initiation of private banks activity, which has led to a new competition phase. Consequently, due to the lifting of European sanctions on Iranian banks, there will be massive competition among banks as a result of the entry of renowned international banks into the Iranian market. During this phase, it is necessary for Iranian banks to focus on their customers to retain them. In so doing, they will achieve higher profitability and maintain their competitiveness, both of which are crucial for survival in the competitive market (Liu, 2007).

In this competitive market, services are essential, and the price is not a differentiator, while customers are more price conscious, smarter, less forgiving and can be enticed by competitors with better offers (Kotler et al., 2009). ECRM implementation is a solution for survival in this competitive market as it can help banks to recognise customer needs and also to guide them towards taking actions for improving performance and increasing their productivity. However, it is crucial to assess deployment feasibility before any adoption and evaluate eCRM regularly to prevent any failure, in other words, assessing readiness and maturity. ECRM readiness refers to the degree to which a bank is prepared to adopt eCRM, and its enhancement is a necessary phase before deployment, while maturity refers to the eCRM of a bank that has already included it in its processes. When eCRM has been in place for several years, it is important to find that it is in the process; it is essential to consider all aspects related to the eCRM and report and benchmark current capabilities.

As can be seen, there is a strong link between readiness and maturity. Any implementation without readiness means failure and having mature eCRM without considering readiness is impossible. In other words, readiness as the first step for any deployment is a bridge to maturity, and proper attention to its components lead banks to higher maturity status which means higher profitability. Therefore, introducing an assessment tool for eCRM readiness and maturity is vital for any bank to attain eCRM benefits. In the next section, the aim and objectives of this study are discussed.

1.4 Aim and objectives

The aim of this study is to create an eCRM readiness and maturity assessment tool for banks and ultimately evaluate eCRM in Iranian banks. In addition, the first objective of this research is to identify the eCRM readiness and maturity factors. Another objective is to develop an empirically-based conceptual framework that explains the factors that affect eCRM readiness and what the maturity levels are. This framework, which consists of two integrated models for readiness and maturity, can help banks to assess their status and levels regarding these two aspects. In light of the above aim and objectives, the main steps followed in this research are:

- To investigate the eCRM perception of researchers;
- To investigate the factors affecting eCRM (failure and success factors);
- To identify eCRM readiness and maturity factors;
- To build an initial eCRM readiness/maturity framework for banks;
- To identify banks as case studies for empirical research;
- To test the preliminary framework on Iranian banks (hypotheses testing);
- To compare the empirical research findings with the initial framework;
- To revise the initial framework;
- To propose an effective eCRM readiness/maturity assessment tool for Iranian banks;
- To assess eCRM readiness and maturity in two banks.

To summarise, this research is aimed at providing an eCRM assessment tool for determining the readiness and maturity of Iranian banks by investigating their principal stakeholder

perceptions in relation to identifying the key factors that should be utilised to measure these two aspects of eCRM. This result will be achieved by applying a combination of statistical and interpretive analysis. Moreover, each objective is addressed in the text and will be discussed.

1.5 Research questions

Constructing the research questions constitutes one of the first methodological steps of a research study and care needs to be taken with this process as these will guide the whole investigation (Bryman, 2015; Bordage & Dawson, 2003).

The research questions for this study aimed at fulfilling the above objectives are as follows:

The main question is:

What are the main factors that can be used to investigate the readiness of Iranian banks for eCRM adoption?

The sub-questions are:

- How can eCRM readiness and maturity in banks be assessed?
- What would be an effective eCRM readiness/maturity assessment tool?

To summarise, in addressing these questions, a readiness/maturity assessment tool will be devised that can be adopted by Iranian banks and also be generalised to non-Iranian contexts. The next section will discuss the contribution to knowledge of this study, which is significant to the eCRM literature in that it involves developing an integrative framework which combines eCRM readiness related factors and eCRM maturity levels.

1.6 Contribution to knowledge

As this research is about eCRM readiness and maturity in the Iranian banking industry, it is essential that the factors affecting eCRM readiness and maturity (failure/success) are identified, as this will help to avoid any implementation failure due to ineffective eCRM. This is one of the contributions of this research. Another contribution to knowledge of this research is to identify and understand the main factors that affect the readiness of eCRM in Iranian banks. This is achieved by surveying the stakeholders in banks, which are the managers and

employees, regarding analysing their perspectives about readiness factors. These factors can be provided for banks as guidelines for evaluating their readiness status. For this purpose, five case study banks, comprising three private and two state, were surveyed. Another contribution to knowledge of this study is the proposal of a model of banks for the assessment of their eCRM maturity. This model helps banks to evaluate eCRM and to identify areas that may need improvement. Finally, a novel integrated readiness/maturity assessment tool for banks is put forward. Introducing eCRM assessment tool for assessing these two aspects to the Iranian banking industry will not only help prevent failure before eCRM deployment, but this will also assist banks in identifying their weaknesses and thus be able to improve their eCRM, thereby achieving better engagement with their customers. For this purpose, it is first necessary to determine the factors affecting eCRM readiness and maturity, which impact on a bank's performance. Accordingly, this study is aimed at identifying these factors from secondary sources and as a result determining the main factors that are relevant within the Iranian context by investigating the perceptions of the banks' managers and employees. According to El Essawi & El Aziz (2012), in this context eCRM adoption needs to be underpinned by a clear understanding of user perceptions. Five Iranian banks were selected as research case studies, and the stakeholders within banks were surveyed to identify technical and social aspects that should be included in a readiness model.

In addition, as mentioned before, there is a straight connection between readiness and maturity. Maturity is the progress of readiness factors; hence, the readiness factors can also consider for assessing maturity but with different criteria. Furthermore, constructing the maturity model based on just identified readiness factors is not as efficient as there are additional factors that can impact on maturity. Therefore, new factors will be added and used to assess maturity. Furthermore, unlike the readiness factors, identifying the new maturity factors by surveying stakeholders is not possible as eCRM is a new concept in Iranian banks and maturity needs several years of development. For example, social eCRM is an essential factor for the success of eCRM, and this factor has a strong relationship with eCRM maturity. Despite the existence of this factor in the existing literature, it is necessary to confirm or reject this factor to employ it in the maturity model and accordingly for assessing maturity. However, as there is no evidence of the existence of social eCRM in Iranian banks this dimension and its associated factors cannot confirm and accordingly it will not be on the proposed maturity model. Therefore, the proposed maturity model without this crucial factor will lose efficiency. To solve this issue, the researcher decided to conduct a study at Middlesex University London to identify and prove different important factors for evaluating eCRM maturity in Iranian banks.

1.7 Research methods

The data in this study were collected from three private and two state banks based in Tehran. Analysing the stakeholder perspectives of both state and private banks provides rich data for understanding the factors affecting eCRM in Iranian banks. The selected banks are the top banks in that nation, in terms of their transactions and their reputations. Therefore, a combination of statistical and interpretative analysis was applied. Statistical analysis of the structured questionnaires was carried out by using the Statistical Package for Social Sciences (SPSS), while for interpreting the interviews the use of NVivo software helped to identify the factors for developing an appropriate eCRM readiness model for Iranian banks.

Factors in the eCRM readiness model, identified through the application of statistical method and interpretation, are assessed using the Analytical Hierarchy Process (AHP). Thus, the proposed AHP approach can be applied for assessing eCRM readiness based on the identified factors. According to Saaty (2008), AHP is a theory of measurement through pairwise comparisons, and it relies on the judgments of experts to derive priority scales. Gathering information leads to an understanding of the occurrences that help to develop good judgments in terms of making decisions (Saaty, 2008). In the current research, as one of the objectives is to assess eCRM readiness in banks, decision makers and managers of banks can assess eCRM readiness by using their judgment regarding the identified factors (eCRM readiness model).

Moreover, as one of the objectives of this study was to assess eCRM maturity, based on the identified eCRM critical success factors (CSFs) and an eCRM survey, an eCRM maturity model was developed. This model was subjected to the RADAR logic tool to assess the eCRM maturity in banks. In addition, bank managers were surveyed to evaluate the maturity model. Finally, a revised framework containing an assessment tool was put forward that can be used by banks to assess their readiness and/or maturity in relation to eCRM. The methodology chapter of this thesis provides a detailed explanation regarding the selected methods.

1.8 Research process

In order to verify that the identified factors from the literature affect eCRM readiness in banks in Iran, one structured questionnaire (for employees) was designed and distributed amongst them. In addition, question lists were prepared for use during interviews with bank decision makers, to assess the appropriateness of the various factors identified from the literature.

The next stage was to gather the data by distributing the questionnaires and holding interviews for subsequent analysis. According to Creswell (2014), collecting diverse types of data can provide an understanding of a research problem than either qualitative or quantitative data alone. Subsequently, the data from the questionnaires were analysed using the Statistical Package for Social Sciences (SPSS) and those from the interviews using NVivo software. The findings from both the statistical and interpretation contexts were then compared to give a better understanding which could be used to provide guidelines and recommendations for the banks regarding the eCRM readiness key dimensions. Also, the identified dimensions in each of the case study banks were ranked using another statistical test to determine the most important dimensions in each case, along with their eCRM readiness level. A bank as a case study was selected to assess its eCRM readiness. Based on the identified eCRM readiness findings, decision-makers and managers of the selected bank were surveyed, and the resulting data were analysed using the Analytical Hierarchy Approach (AHP) method. This analysis method helped to rank the factors according to their priority, as stated by the bank decision makers. Furthermore, as an eCRM maturity assessment was one of the objectives of this research, another questionnaire, based on the proposed eCRM maturity model, was designed and distributed among the decision makers of the selected bank to asses eCRM maturity.

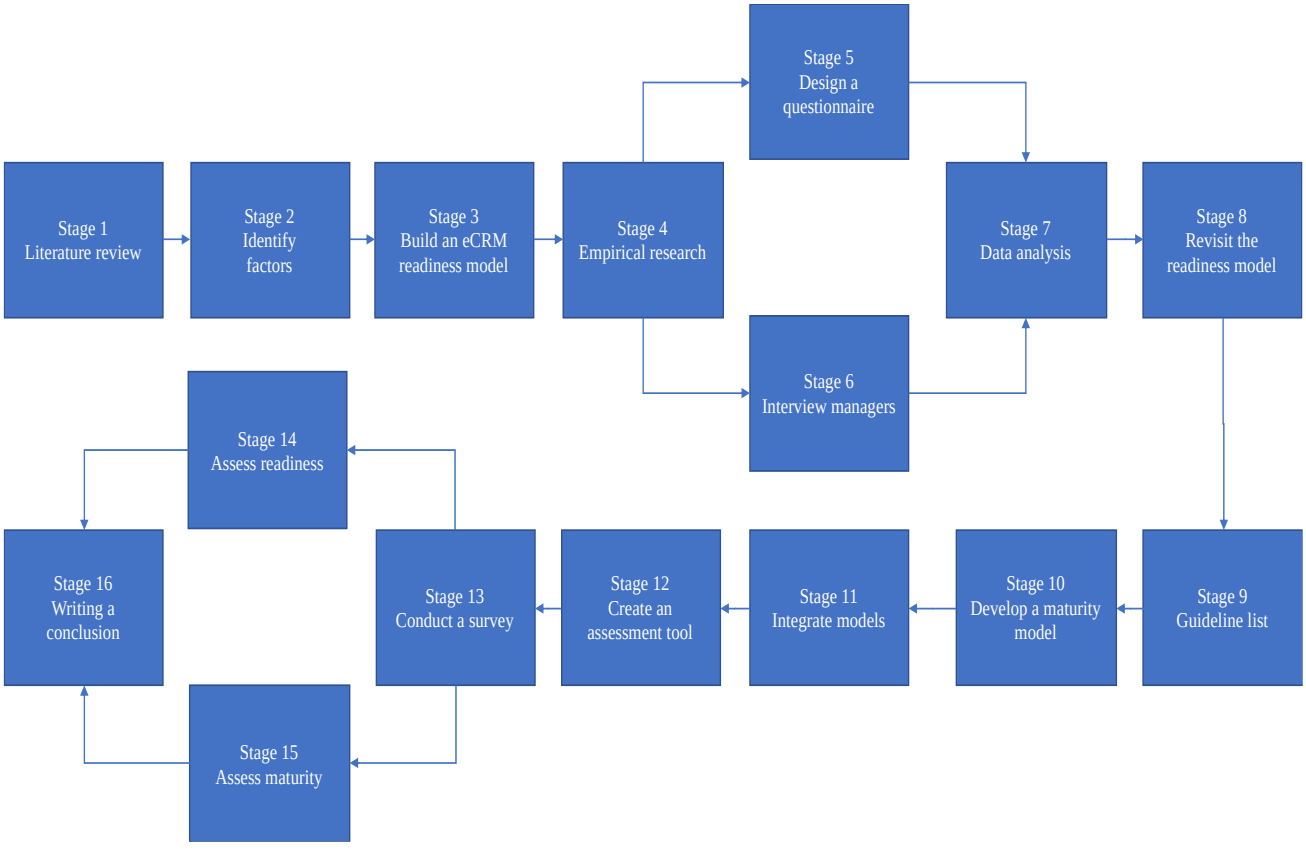


Figure 1-1: The research process

The proposed eCRM maturity model is based on a scoring method, which will be explained in Chapter 4. Finally, the findings of all the analysis stages were integrated for writing up, and conclusions based on these findings were drawn, with recommendations made for the banking industry in Iran. The following are the research process stages which are shown in Figure 1-1:

1. Reviewing the existing literature about eCRM concept;
2. Identifying factors affecting eCRM readiness and maturity;
3. Developing a preliminary theoretical eCRM readiness model based on the identified factors and dimensions;
4. Conducting empirical research in the case study banks;
5. Distributing questionnaires among bank staff;
6. Interviewing bank managers and decision makers;
7. Analysing the data using SPSS and NVivo;
8. Revisiting the eCRM readiness model based on findings;
9. Making an eCRM readiness guideline/recommendation list for Iranian banks
10. Developing an eCRM maturity model based on the CSFs and levels;
11. Developing an integrated eCRM readiness/maturity framework;
12. Creating the eCRM readiness and maturity assessment tool using;
13. Conducting a survey with bank managers using the assessment tool (online or spreadsheet);
14. Assessing readiness based on the eCRM readiness assessment tool;
15. Assessing maturity based on the eCRM maturity assessment tool;
16. Writing reports to banks - one for eCRM readiness and the other for maturity.

1.9 Thesis outline

This section provides an outline of the contents of the thesis and the key purposes of the chapters. Figure 1-2 illustrates the overall thesis outline. The structure of this PhD thesis consists of four elements: background theory, focal theory, data theory and novel contribution.

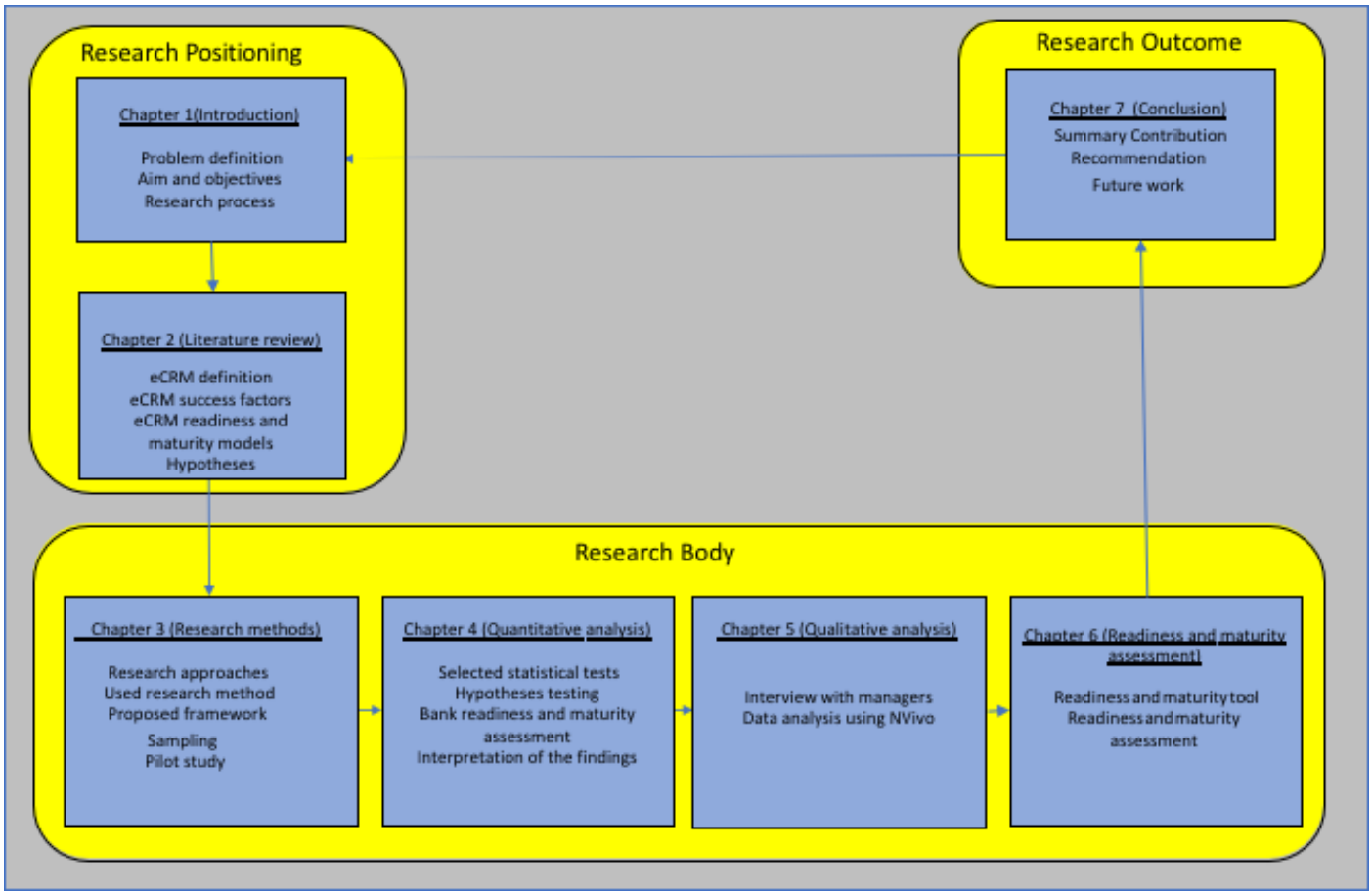


Figure 1-2: The overall thesis outline

Establishing a comprehensive background theory involves assessing the field of study, and identifying the problem domain discussed in Chapter 2, the literature review of this thesis. The chapter begins by providing a brief history of the CRM and eCRM concepts, their definitions and characteristics, their evolution and their benefits. CRM and eCRM success factors along with the existing models and frameworks are discussed. The Iranian banking industry and the problem identified in the current research area are addressed. Finally, hypotheses are developed.

The second element, focal theory, concentrates on developing a conceptual model that will shape the foundation of the research. The key tasks in this phase are generating the conceptual framework to promote the academic discussion. After conducting a literature review using keywords, a theory can be created. This theory is an interrelated set of variables formed into hypotheses that specify the relationship among the identified variables (Creswell, 2014). In addition, as mentioned above, another element is data theory, which is concerned with the development of appropriate research methods, data collection processes and data analysis.

Chapter 3 involves drawing on focal theory, as one of the aforementioned elements. This chapter, the research methods chapter, begins by discussing the possible research approaches, with the following explanation and justification for the chosen research methods. A conceptual framework is proposed and developed to fill the gap identified in the literature review (Chapter 1). This conceptual framework is applied to assess the readiness and maturity of eCRM in the Iranian banking industry. This preliminary theoretical framework is based on identified factors from the literature. Then, conducting the pilot studies, issues relating to research ethics and population, and sampling of the research are covered.

The purpose of Chapter 4 is to present the quantitative data analysis and test the research hypotheses, while in Chapter 5, the qualitative data analysis results are discussed. Chapter 6 assesses the readiness/maturity and then proposes an assessment tool. The final chapter presents the conclusions of this thesis, which answer the research questions, offer recommendations to the Iranian banks according to the results, and discuss the limitations and directions for future research. Therefore, the overall structure of this PhD thesis is composed of seven chapters in which, each chapter addressing the particular issue related to the objectives stated above.

1.10 Summary

This chapter has presented an outline of why the research was undertaken, along with the discussion of the research motivations as well as the potential practical and theoretical outcomes. The aim of the study and the key objectives were also addressed. The issues regarding the problems identified have led to the construction of the research question and sub-questions for guiding the research process. Finally, the adopted research methodology, the research procedures, and the thesis structure have been described. The next chapter is the literature review, in which CRM and eCRM are covered in more depth with key factors for the success of eCRM being identified and explained.

Chapter 2

Literature Review

Chapter 2

2. Literature Review

2.1 Introduction

Figure 2-1 shows the tree structure of the fields investigated as part of the review of the CRM and eCRM area of study. Chapter 1 provided a context for the research and described the foundation and motivation for conducting the research. The problems addressed and discussed are the shortage of research on eCRM readiness and maturity in developing countries and the high percentage of failure in implementation of CRM/eCRM and the lack of readiness/maturity framework for eCRM implementation in the banking industry. In addition, the research process, hypotheses and research questions have been described. Finally, Chapter 1 outlined the aim and objectives of the research, which is the investigation of eCRM readiness and maturity in the banking industry through the assessment of the feasibility of a proposed conceptual framework that consists of success factors and maturity levels. In addition, it presented and briefly discussed the methodology used in the research to commence the research which involves five separate case studies.

In this chapter, the existing literature will be reviewed. With regards to the importance of eCRM implementation, its development in organisations, and introducing CRM and eCRM from different perspectives, the chapter provides a clear picture of what eCRM is and what different people understand the eCRM concept to be, with explanations of eCRM components, technologies and the differences compared to CRM. Moreover, this chapter emphasises the exploration of the literature in order to identify the reason behind eCRM failure by reviewing secondary data and other related literature, which helps to develop a framework consisting of success factors for implementation of eCRM, which helps organisational profitability and customer retention.

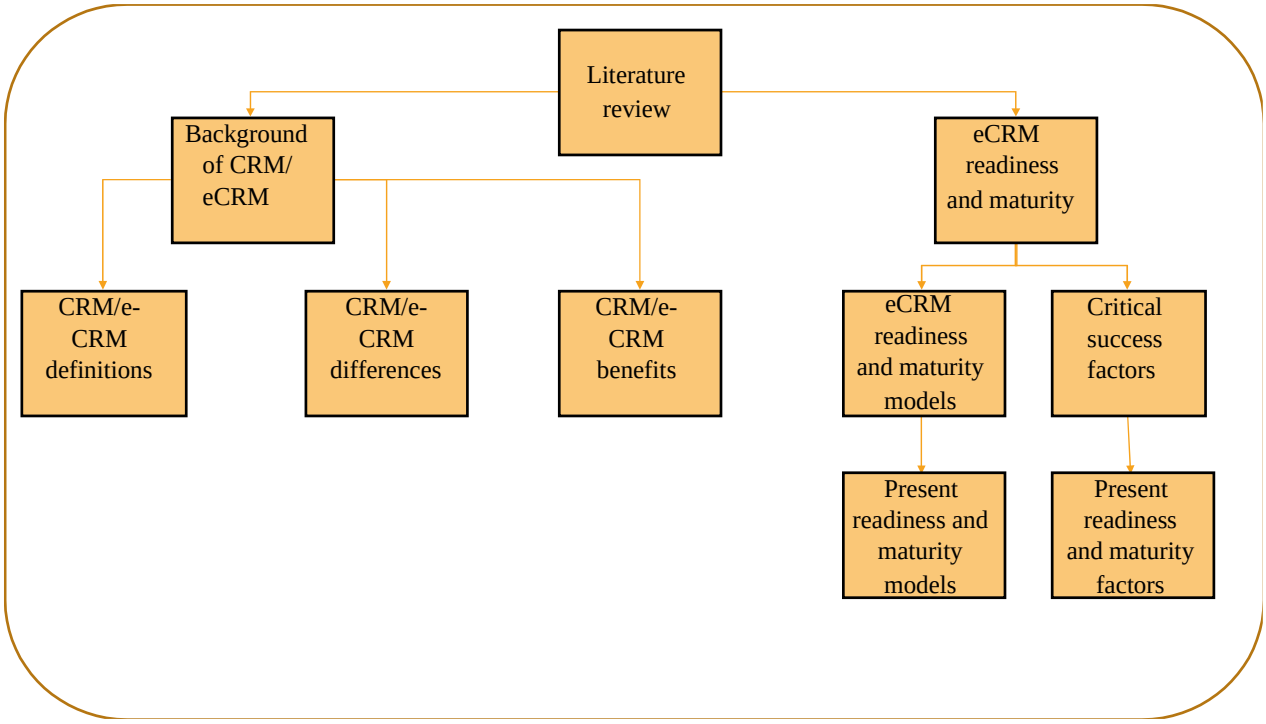


Figure 2-1: Tree structure of study

Therefore, in the current research, dimensions along with their associated factors are identified, based on their existence, the researcher's understanding, and the level of acceptance from theoretical and empirical studies. This chapter highlights these dimensions and relevant factors to develop a framework for readiness and maturity of eCRM with regards to these factors. Hence, after reviewing the problem and identifying the gap in the current literature, the importance eCRM success factors will be revealed by investigating CRM and eCRM readiness and maturity frameworks and other sources. Finally, these factors will help to create and develop a framework for eCRM readiness and maturity, which leads to the proposal of assessment tools for eCRM readiness and maturity. These tools help banks to assess eCRM readiness before implementation and determine the maturity level indicating the current eCRM situation in a bank.

The chapter has the following objectives:

- Introduce the background of CRM and eCRM
- Present CRM and eCRM definitions and characteristics
- CRM and eCRM components
- Illustrate the CRM and eCRM benefits
- Discuss the electronic readiness

- Discuss eCRM readiness and maturity
- Discuss the CRM and eCRM success factors
- Discuss the CRM and eCRM models and frameworks
- Introduce eCRM adoption in Iranian banking industry
- Present the dimensions for assessing eCRM readiness and maturity

As described, the first objective of this chapter is to introduce and discuss a CRM and eCRM definition that helps to propose a framework for current research and will be illustrated in Chapter 3. CRM and eCRM have different meanings to different people, therefore different CRM and eCRM perspectives will be discussed, and the difference between them will be described. Another objective of this chapter is to examine the evolution of CRM and eCRM, their components and their technologies. The fourth objective of this chapter is to discuss the gap in the related literature by concentrating on eCRM failure, eCRM success factors, eCRM readiness and maturity frameworks, and eCRM implementation in developing countries. The next objectives in this research are to evaluate the CRM and eCRM readiness and maturity models and then to identify the factors affecting the success of CRM and eCRM, with discussion of the reasons behind failure in CRM and eCRM implementation. Another objective of this chapter is to discuss technology adoption in the Iranian banking industry and present the dimensions and factors for assessing eCRM readiness and maturity in organisations by proposing a conceptual framework, which is developed by evaluating existing frameworks and models for CRM and eCRM and evaluate the limitations to anticipating the possible gaps.

2.2 Chapter Structure

This chapter starts with section 2.3 in which the research will explain the CRM definition and characteristics. In section 2.4 the eCRM definition and characteristics from different perspectives will discuss, which help to identify the scope of eCRM within the current research. After that, in section 2.5, the background to CRM and eCRM, with a brief explanation of their history and development will discuss. After that, in section 2.6 and 2.7, CRM and e CRM types and benefits will be discussed.

Section 2.8 will discuss the electronic readiness definition and section 2.9 will review the factors affecting the success or failure of CRM and eCRM readiness and maturity. In section 2.10, CRM and eCRM frameworks and models, along with details of previous attempts to

provide them, will be discussed. Reviewing these frameworks will help the researcher in evaluating and identifying limitations, as well as their contributions in the CRM and eCRM implementation context. In subsection 2.11.1, technology adoption in developing countries, particularly in the Iranian banking industry, will be discussed. Finally, in section 2.12 the chapter will be summarised to help the researcher to identify any gaps, which as the aim of this research will be fulfilled throughout the study.

2.3 CRM definition and characteristics

According to Nguyen et al. (2007), one of the barriers to successful implementation of CRM is a lack of CRM understanding and vision for an organisation, which requires developing a more precise definition of what CRM means for them. There are many different definitions of CRM (Ahmad Bhat & Ahmad Darzi, 2016), ranging from narrow (technical) to broad (strategic) definitions due to the different approaches carried out. According to Da Silva and Rahimi (2007), the reason is the emergence of this concept in two marketing and IT fields. Furthermore, as different people understand CRM with different perceptions and in different ways, it is necessary to consider a clear definition of CRM and eCRM and the scope of research to achieve their objectives.

CRM is defined by some researchers as a paradigm of marketing (Payne & Frow, 2005; Chen & Popovich, 2003; Zablah et al., 2004), implementing relationship strategies by utilising IT (Rayal & Payne, 2001; Chen & Chen, 2004); a relationship marketing (Parvatiyar & Sheth, 2001); a philosophy to select customer and manage and develop a long-term relationship with them (Kumar & Reinartz, 2005; Buttle; 2009); a management approach (Bradshaw & Brash, 2001); an IT-enhanced process to identify, develop, integrate and focus on the various competencies of the organisation based on customer needs and optimise profitability, revenue and customer satisfaction by organising around customer segments, fostering customer-satisfying behaviours and implementing customer-centric processes (Dafoulas & Essawi, 2006;Starkey & Woodcock, 2002); as an organisation processes to manage its contacts with existing and prospective customers (Swift, 2000; Ryals & Payne, 2001; Rigby et al., 2002; Bose, 2002; Greenberg, 2009), long-term customer value (Payne & Frow, 2005; Xu et al., 2002); a key competitive strategy (Brown & Gravely, 2003); and as a strategic process (Bohling et al., 2006; Zablah et al., 2004) that integrates process, people, and technology cross functionally to understand customers, deliver profitable and long-term relationships with them, and improve stakeholder value (Fjermestad & Romano, 2003; Shang and Lin, 2005; payne &

Frow, 2005). Moreover, CRM is a disciplined business strategy used to create a long-time, profitable customer relationship and involves the acquisition, analysis and use of knowledge about customers to sell more goods or services and motivate valuable customers to remain loyal to buy again (Greenberg, 2009; Bose, 2002; Dyche', 2002).

As seen above, many researchers define CRM differently with regard to their field and perspectives but it seems that for this study the definitions which combine marketing and information technology are better as they emphasise the use of software and Internet capabilities in order to identify existing and prospective customer segments and deliver a long-term customer value at a profit, achieving a win-win relationships with them (El Essawi & El Aziz, 2012; Payne & Frow, 2005; Xu et al., 2002; Starkey & Woodcock, 2002). CRM improves customer relationships, leading to customer satisfaction, and customer loyalty, which provides a competitive advantage to any organisations, such as banks, in any field. Therefore, the latter definition which conceptualises CRM as a combination of IT and marketing illustrates that CRM is not restricted to technology and banks' decision makers who need to know what they are implementing. This definition can be adopted for the purpose of this study as a lack of understanding of the CRM definition by managers in banks may be one of the main reasons for CRM failures.

2.4 eCRM definition and characteristics

Migrating the organisations from human-intensive organisation to ones that focuses on multiple electronic contact points, such as an e-mail and the Web in order to develop, manage and measure relationships with customers, causes those organisations to move away from offline customer relationship management (CRM) to electronic channels, which this approach also calls electronic customer relationship management or eCRM. The Internet has not only changed the way of communication and the lives of people, but it has also changed the way organisations do business, and the emergence of the Internet and information technologies have provided vast opportunities to companies. According to Chen & Chen (2004), eCRM is the major paradigm of relationship marketing in the e-world and is considered as one of the primary strategic initiatives in industries that can lead to an organisation creating a long-term relationship with valued customers and profitability (Sivaraks et al., 2011; Chen & Chen, 2004).

ECRM is an integral part of online distribution and marketing that expands the traditional CRM techniques by integrating technologies of new electronic channels, such as wireless, voice

technologies and Web, and combining them with e-business applications into the overall CRM strategy of an enterprise so that these channels are an opportunity for organisations to be used as a platform for the delivery of CRM functions (Sivaraks et al., 2011; Feinberg & Kadam, 2002).

In addition, eCRM is one of the channels that a company can use to deploy its CRM strategies and is a combination of hardware, software, process, application and management commitment (Dyche', 2002), making use of Internet technology and automation (El Essawi & El Aziz, 2012). E-CRM integrates with existing CRM processes and software (Fjermestad & Romano, 2003) to improve customer service, retain customers and provide analytical capabilities (El Essawi & El Aziz, 2012; Romano & Fjermestad, 2001). The overall objective of an eCRM system is to improve the planning, acquiring and controlling of information exchanged with customers across different channels (Mendoza et al., 2007) and is concerned with increasing profitability, enabling businesses to keep customers under control and make them feel they are actually a part of the business progress. Therefore, eCRM keeps customers as a valuable asset for organisations by using engaging techniques and any neglect in this two-way interaction will lead to losing one of the organisation's asset.

As seen in literature, despite the interchangeable use of CRM and eCRM, the definitions of them are not the same. CRM is focused on creating a good and long-term relationship with an organisation and its customers through traditional ways, such as retail, store, faxes and telephones, while eCRM places emphasis on traditional CRM plus the use of electronic channels, such as email, websites, and mobiles, and also Internet technologies, such as social networks, in order to improve communication with customers and to understand their needs. According to Sivaraks et al. (2011), eCRM advantages exist when the organisation applies an eCRM approach to its service interaction marketing, such as two-way interaction service relationships, ability to provide service for customers from anywhere at any time, and quick service or response time. Therefore, eCRM is not just technology, and as eCRM implementation has enormous benefits to both banks and customers; it is crucial to pay attention to other factors such as people and processes for eCRM success. In other words, eCRM means technology, culture, and strategy within an organisation. To conclude, for this research a suitable definition is building a customer-centric culture by which a strategy is created to attract new customers and retain existing ones, using IT applications to achieve a mutual benefit to both customers and organisations. This defintions can be considered and adopted for the purpose of this study. In the next section, the types of CRM and eCRM and their components are discussed.

2.5 Background of CRM and eCRM

In 1990, organisations focus was on performing their customer transactions and addressing their strategies with the aim of achieving effective sales promotions, but since then many organisations have changed their focus from just performing customer transactions to maintaining lasting positive relationships with customers and raising customer loyalty (Li and Mao, 2012). This diverted strategy caused shifts from product-oriented to customer-oriented organisations, which shows the importance of maintaining customers and is even more important than attracting new ones. Despite this, the paradigm has shifted from a transaction-based model to a relationship-based one, with emphasis on attracting, developing and retaining profitable relationships (Siu, 2016) but attracting customers is more difficult than maintaining existing ones. This means that organisations need to build and improve their relationships with customers from day one. This idea can also be applied to banks, as their performances depend upon their customers' satisfaction. Banks have to work hard to retain customers by focusing on essential elements upon which hinges their success in the rapidly changing economic environment. Therefore, banks need to know how ready they are regarding eCRM implementation and how mature they are after deployment.

As mentioned earlier, at the beginning of the 1900s the organisations' focus was on customer marketing, where organisations can adapt their offering to treat each customer as an individual (Dafoulas & Essawi, 2006). According to White (2010), marketing is commonly believed to have progressed through five distinct phases of evolution since the beginning of time. Since World War II, marketing has evolved in approximately twenty-year cycles. The first is known as the simple trade era, where everything available was made or harvested by hand and available in limited supply. This era is described as having lasted from the beginning of time through to the mid-19th century and was then replaced by the production era at the time of industrial revolution. This is the era of the field of dreams business philosophy of "if you build it, they will come" (White, 2010), which was successful because there were few alternative product options available.

The third one is the sales era, which followed the production era once pent-up consumer demand became saturated. Competition for market share increased, and companies had to work

hard to sell their products to consumers as commoditisation appeared. The post-World War II economic boom fostered the emergence of the marketing department era, with manufacturing firms realising that the sales orientation of the past was not resonating with consumers and this period became "the great awakening" in western business (White, 2010). After that, when the marketing company era emerged, all employees became part of the marketing effort, either directly or indirectly, and the customer became king.

Two new eras have been added recently by Faudree (2016) and Gale (2007). Gale (2007), in her article "Marketing: Historical Perspectives", introduced a sixth era which is the same as White's five era descriptions with one additional new era. This is the relationship marketing era, whose goal is to build long-term, mutually beneficial relationships with the customer. During this era, CRM and data-mining became the buzzwords in marketing as they were used to capture information about each customer. In addition, Faudree (2016), in his article "The seven eras of marketing", identified another era which is called the social/mobile marketing era, which focuses on real-time connections and social exchange based on relationships driven by the consumers. Therefore, due to the emergence of social media and its importance in customers engagement, organisations have more interest in connecting with customers in real-time. Thus, the current era of marketing could be called the real-time era.

Customer relationship interest began to grow in the 1990s (Navimipour & Soltani, 2016; Ngai, 2005) and the concept of customer relationship management (CRM) emerged, helping organisations to acquire and continuously generate customer knowledge (Khodakarami & Chan, 2014). The technological era caused organisations to shift from being human-intensive to becoming focused on multiple electronic contact points, such as e-mail, and the web, and consequently organisations migrated away from off-line CRM to electronic channels, which gives this approach the name electronic customer relationship management(eCRM). ECRM is an upcoming trend and, as one of the first strategic initiatives in industries, uses these technologies as a channel for commerce and information. In addition, eCRM as a platform for the delivery of CRM functions on the web in organisations (Sivaraks et al., 2011), can help organisations to improve their quality of service, to provide a convenience to customers, and to foster a relationship with customers.

In this technological era, brand loyalty is rare and organisations, such as banks, have to consider performance enhancement initiatives that drive customer retention and lead conversion to their brand and services. This can be achieved by eCRM implementation. Banks need to investigate what factors are important for eCRM readiness and maturity, which helps them to guarantee

successful implementation. Therefore, assessing eCRM readiness and maturity is crucial for banks and, considering the lack of consistent approaches in assessing eCRM readiness and maturity in the banking industry, introducing such an assessment tool can help banks to determine their readiness situation and maturity level. This study attempts to fill this gap by introducing such a tool.

Therefore, eCRM implementation can improve service and response time, anywhere and at anytime access for customers, two-way interaction service relationships, customer loyalty, customer interaction and satisfaction, convenience and service quality (Sayani, 2015; Scullin et al., 2002). However, there is a vast graveyard of failed eCRM projects. Forrester (2016) illustrates that unsuccessful deployment not only helped to deliver profitable growth but also had damaged long-standing customer relationships. Therefore, it is necessary to avoid pitfalls by considering two essential perils: 1. Implementing before any readiness assessment and 2. ECRM is not a 'one-and-done' project. In the next section, CRM and eCRM will be discussed with different definitions in more detail in order to provide a better insight into the concept.

2.6 CRM and eCRM types and components

CRM has three different types: operational CRM, analytical CRM and collaborative CRM (Khodakarami & Chan, 2016). Despite the different perspectives in CRM definitions, CRM has three significant components: technology (which is an enabler for CRM and refers to computer capabilities that allow an organisation to collect, organise, and use data about their customers); people (who are employees and customers and important for CRM success); and business process (a component involving both direct and indirect interaction with customers, regard to CRM, addresses marketing, sales and services) (Almotairi, 2009; Mendoza et al., 2007).

CRM is a combination of people, process, technology, and management (Alhaiou, 2011), and CRM types and CRM components are important in order to help organisations deliver CRM successfully within an organisation. Hence, it is crucial to understand CRM's main components and types regarding their functionality and capability in CRM success.

As mentioned, technology is an important CRM component which links front-office functions, such as marketing, sales and customer service, with those of back-office, such as operations, financial and human resources with customer touch points controlled by separate information systems (El Essawi & El Aziz, 2012). According to Alhaiou (2011), CRM applications get the

full benefit of information technology (IT) because of their ability to collect and analyse data on customer patterns, interpret customer behaviour, develop predictive models, respond with timely and effective customised communications and deliver product and service value to individual customers.

Another important CRM component is a business process. As CRM is an enterprise-wide customer-oriented business model, it is important to redesign core business processes, starting from customer perspectives. Therefore, in this case, CRM must be built around customers' needs, treating them individually in order to achieve customer customer-centric organisation goals (Alhaiou, 2011, Kim et al., 2012). Furthermore, people, along with the technology and business processes, is another component for CRM success that refers to organisation employees who are building the blocks of customer relations. Investing in this important component brings success for CRM but needs an understanding of objectives set and meeting the required standards (Alhaiou, 2011; Chen & Popovich, 2003).

After reviewing the CRM types and important components, this study turns to discuss the e-CRM components and types. ECRM is CRM online, and it is not just about technology or software: it is about people, process, and technology, and aligns business processes with customer strategy by supporting technologies in order to attract and retain valuable customers whilst eliminating non-valuable or less profitable ones (El Essawi & El Aziz, 2012; Greenberg, 2009; Rigby et al., 2002; Romano & Fjermestad, 2009). According to Dyche' (2002), there are two main types of eCRM: operational eCRM, which is about customer touch points as organisational points of customer contact from start to finish, and e-mail, websites or social media and analytical eCRM, which is concerned with processing customer data by using technologies.

According to El Essawi & El Aziz (2012), eCRM can be analytical, operational or collaborative. Analytical eCRM requires technology and is about collecting customers' data continuously. Operational eCRM is about customer touch points and refers to social media, emails. The purpose of collaborative eCRM is to improve the quality of customer service, customer satisfaction and loyalty by collecting information about customers. To conclude, eCRM has frequently been defined by many researches as an integral part of online distribution and marketing that expands the traditional CRM techniques by integrating technologies of new electronic channels, such as Web and voice technologies, and combining them with e-business applications into the overall CRM strategy of an enterprise (Sivaraks et al., 2012). Therefore, eCRM components, such as people, process and technology, need to be investigated before any

eCRM implementation can be made into an enterprise to prevent any failure and achieve the benefits of eCRM implementation. In the next section, the benefits of CRM and eCRM are discussed which help to demonstrate the importance of eCRM implementation in any organisation, especially the banking industry.

2.7 CRM and eCRM benefits

In this section, CRM and eCRM benefits are discussed in order to give an insight into the importance of CRM and eCRM implementation in organisations. CRM as an overall business strategy, not as a product or service, helps an organization to manage a relationship with customers effectively and provides an integrated customer view to organisations (Navimipour & Soltani, 2016). The aim of CRM is to gain a competitive advantage in terms of managing customers, increasing profitability and income, customisation, saving in costs of gathering customer information, improvements in communication processes with real customers, and presenting real products for each customer at the right time through suitable networks for each of them (Padmavathy et al., 2012; Thakur, 2014; Swift, 2000).

CRM allows organisations to leverage information from their database to achieve customer retention and create a better relationship with customers, reduce costs, achieve customer loyalty, and increase revenue. Successful implementation of CRM brings a dramatic effect on bottom-line performance (Foss et al., 2008; Roh et al., 2005). It helps an organisation to monitor customers, collect data from them, and evaluate data in order to create a real advantage by extracting information from them and finally create competitive advantage, and optimise profitability, revenue, and customer satisfaction. Furthermore, CRM increases revenue, building customer loyalty by improving customer services and storing organisation information.

The primary focus of CRM is to enable the organisation to create and retain profitable customers, thereby reducing organisation costs incurred by obtaining new customers since the cost of attracting new customers is estimated to be five times the cost of retaining existing ones (Kotler et al., 2009). It is not surprising that for many organisations investing in CRM can improve their ability to target customers and improve sales force efficiency and effectiveness which brings customer satisfaction, customer loyalty and competitive advantage (Bompolis & Boutsouki, 2014; Reimer 7 Becker, 2015).

While CRM applications are designed around product and job functions and Web-enabled

CRM applications are designed around one business or department unit, applications in eCRM are designed with customers in mind in order to give them the total experience on the Web and for the entire enterprise, including all customers, suppliers, and partners, unlike in CRM (Alhaiou, 2011). The use of Internet technology enables organisations to quickly capture new customers track their behaviour and, importantly, build a long-term relationship with them. Therefore, as the primary objective of any organisation is to maintain the relationship with its customers, eCRM implementation helps organisation to achieve these objectives and improve customer service and support, reduce costs, increase customer loyalty, and achieve more effective marketing via the Internet (Navimipour & Soltani, 2016; Alhaiou, 2011; Scullin et al., 2002).

ECRM helps organisations to communicate with their customers and monitor their behaviour and, based on the collected information from them, act to fulfil the individual needs of customers. In other words, eCRM is beneficial for both customers and organisations as it brings value to both of them.

According to Farooqi et al. (2013), eCRM implementation benefits can be classified into four classifications:

1. General benefits
    - Create a long-term relationship with customers with minimum cost
    - Reduce customer defection rate
    - Increase profitability from low-profit customers
    - Focus on high-value customers
    - Customer loyalty

2. Specific benefits
    - Enhance customer interaction and relationship
    - Manage customer touch points
    - E-loyalty
    - Source of competitive advantage

3. Benefits to customers
    - Customer interaction
    - Customer satisfaction
    - Convenience

- A speed of processing the transaction through e-response
- Trust
- Service quality

4. Competitive advantage
    - Strength in customer purchase decision
    - Digital loyalty cycle

Additionally, eCRM implementation provides quick response time and service to customers' enquiries at any time and from anywhere and, as a two-way interaction service relationship, for any businesses, who by implementing it can expect a greater gain in the areas of relationship outcome and customer relationship quality (Sivaraks et al., 2011). ECRM implementation is beneficial for both businesses and their customers and brings trust, convenience, and satisfaction to customers, as well as long-term relationship and customer retention for any organisation, including banks. In the next section, a definition of electronic readiness in a firm will be discussed.

These benefits also affect the Iranian banking sector in pursuing eCRM solutions. These benefits help banks to focus on the customer, improve profitability, satisfy customers, centralise information, and increase share-of-wallet. However, banks in Iran are facing aggressive competition, and in order to survive in a competitive and uncertain marketplace, they need to implement eCRM successfully. This requires assessing the overall position in terms of readiness to progress with eCRM implementation and to identify how well developed their banks are in relative to achieving these benefits. Therefore, it is necessary to determine whether banks are prepared to launch eCRM and how mature they are to prevent any failure and to gauge their eCRM performance. This can be achieved by introducing eCRM readiness and maturity models for banks.

2.8 Electronic readiness

After discussing eCRM benefits to the organisations, as the purpose of this research is to develop an eCRM readiness and maturity framework, it is essential to understand the definition of eCRM readiness and maturity and discuss the factors affecting readiness and maturity before further discussing the existing models and frameworks. Due to the technological and societal changes, the global market is racing rapidly towards a new economic order rooted in e-commerce. Therefore, electronic readiness assessment has become an increasing challenge.

In order to adopt eCRM in an organisation, it is necessary to understand the user characteristics, perception, and electronic readiness (El Essawi & El Aziz, 2012). Electronic readiness, or e-readiness, is generically determined by whether an organization or a country is ready to adopt information technology (IT) and its relevant applications to create competitive advantages in the market and has been an important area for assessment of the potential for IT adoption (Mutula & Pieter Van, 2006; Park et al., 2013; Hung et al., 2014). E-readiness is defined as an assessment of organisation e-commerce, organisational, managerial and external situations in making decisions about e-commerce applications and is concerned with evaluating the degree of readiness to use Information and Communication Technologies (ICTs) for fostering welfare or gaining profits in a country or an organization (Hung et al., 2014; Molla & Licker, 2005).

Molla & Licker (2005), in their paper, discuss a holistic and theoretically constructed model that identifies the relevant contextual and organisational factors that affect e-commerce adoption in developing countries. The analysis and interpretation of their findings illustrate that awareness, business and technological resources, and the human resource is more influential than environmental, which focuses on external influences factors such as market forces, institutional forces, inter-organisational relationship, and the e-readiness of socio-economic forces. Moreover, e-commerce activities' adoption in addition to helping large organisations to make a profit, also helps medium-sized enterprises (SMEs) to gain significant benefits through extending the organisation territory and, importantly, strengthening customer relationships.

E-readiness can be defined as evaluating the degree of readiness to use ICTs for fostering welfare or gaining profits in a country or an organisation (Park et al., 2013). The original e-readiness concept was first introduced by The Computer System Policy (CSPP) in 1998, as a degree of application of ICT in an organisation, ability of a country to access high speed networks in a competitive marketplace, provision of online security mechanism in a network environment, level of privacy protection and to assess the digital divide between developed and developing countries (Hung et al., 2014; Mutula & Pieter Van, 2006).

Goulding & Lou (2013) recognised three factors as the main underpinning themes: people, process and technology, with five main enablers: managing business and information processes, leadership and empowerment, policy/strategy/vision, and ICT sharability/interoperability as the core e-readiness factors and enablers. Furthermore, a framework identified by Karanasios and Burgess (2006) consists of many factors such as managerial commitment, awareness, technological resources, and employee's skills, which are important for organisational e-

readiness.

Dada (2006) proposed an e-readiness model for developing countries and concluded that looking at the level of the individuals within the organisation using the technology is useful in order to obtain an accurate e-readiness measure. In addition, this model considers both organisational level influencing a user's acceptance of the technology (performance expectancy, effort expectancy, social influence), and the environmental level considering the factors that create an enabling environment for technology (e-readiness measures).

After reviewing e-readiness descriptions and relevant frameworks, it is crucial to link the e-readiness literature to e-CRM which, as a prominent information system, makes use of Internet Technology (IT) and automation and integrates it with existing CRM process and software (Navimipour & Soltani, 2016; Fjermestad & Romano, 2003).

As mentioned, e-readiness is the readiness of an organisation to adopt e-commerce through the use of technology and, based on literature review; organisational readiness affects e-readiness. Thus, for eCRM implementation in banks, it is necessary to assess organisational readiness alongside other factors that impact on eCRM deployment.

Some factors, such as characteristics of an organisation, can help banks to effectively adopt e-CRM and also influence evaluation of the return from eCRM implementation. 'Characteristics of an organisation' refers to organisations' size, with larger organisations more likely to adopt eCRM and have higher implementation levels of eCRM technologies. Of course, larger organisations such as banks are usually more able to invest in technology than smaller ones because of capital and flexibility in the movement of labour.

Based on the literature, it can be concluded that organisational and technological factors are crucial for eCRM deployment. Factors such as management commitment, employees, knowledge and IT infrastructure used for assessing eCRM readiness in banks help to evaluate the bank regarding eCRM implementation. In addition, these factors alone cannot guarantee the readiness of banks for eCRM deployment as it is important to pay attention to all factors in order to produce the best results.

After reviewing e-readiness and eCRM literature, it can be seen that the eCRM failure was due to a lack of managerial support, which is an important factor for organisation e-readiness. Moreover, 60% of eCRM solutions that have been deployed failed (Skuid, 2015) and organisations did not achieve the expected return on investment. On the other hand, in every

three implementations, there is likely to be at least one failure (AMR, 2017), showing the low level of satisfactory and consequent failure to meet organisational needs. Hence, having an action plan for aims is crucial as it can enhance the level of satisfaction and increase the return on investment.

As mentioned, employees also have an important influence on organisational e-readiness. Therefore, for the adoption of eCRM bank employees are important. According to Xu et al. (2002), employees' resistance to change is an important failure factor for the success of eCRM. Hence, this factor can also be used for assessing the readiness of eCRM to prevent any failure in future. In addition, top management support and their motivation can help to overcome this factor in banks.

IT infrastructure is an important factor for organisations' e-readiness, and also advanced technology can help banks to strengthen their relationship with customers, which is the essence of eCRM. From the literature, it has been found that lack of integration with other systems is one of the factors for eCRM failure. Therefore, this factor also can be used for assessing eCRM readiness.

Organisations, in particular banks, need not be anxious when implementing eCRM if they are looking to gain success and achieve their aims. One of the benefits of eCRM for banks is the chance to build a long-term relationship with customers. Therefore, for the successful deployment, banks must be customer-focused in understanding their needs. This, again, can be achieved by management understanding the importance of customers and defining good strategy.

Unfortunately, banks do not undertake any assessment before eCRM deployment to determine whether they are ready for adoption. This is the reason why this current research is important for banks. In addition, as the focus of this research is on eCRM readiness and maturity, the existing models and frameworks for readiness and maturity, their assessment, and factors affecting eCRM readiness and maturity will be discussed to help answer the research questions.

2.9 eCRM readiness and maturity

ECRM readiness, as defined before, is the readiness of an organisation to adopt eCRM initiatives. ECRM readiness assessment helps organisations to achieve success. Organisations can recognise that are they ready for eCRM implementation, which leads them to better and productive relationships with customers who are the main asset for any organisation and

represent the core of a business.

According to Nguyen et al. (2007), before any decision on investing in eCRM programs, any businesses need to aware of critical strategies, including:

- Customer: this is an important strategy used to identify customers, based on the corporate mission and the existing business model, and organisations must understand the types of customers they should be serving.
- Channel: it is important to choose effective and appropriate channels so this is another important strategy which organisations must focus on and use to evaluate the potential channels available to them regularly to find out which one they should use and how well they are using it.
- Brand: as a goal of organisations is to understand and recognise their customer's behaviour, so brand values strategy contributes to this ultimate goal and encapsulates all the customers' interactions with the organisation and its products and services. Therefore, the brand as a consumer-driven strategy can be based on customer loyalty, which is one of the benefits of eCRM implementation.

Management has to investigate issues encountered during the process of before, during, and after eCRM implementation otherwise, problems will appear. According to Ramsey (2003), some of these problems are:

- Lack of definition: management fad in many organisations has caused them to follow the current market in order to get the latest and newest technologies and, as with CRM, eCRM is surrounded with new technology, new concepts, new methodologies, but is still evolving. Therefore, organisations confront many issues in eCRM implementation due to uncertainty in what they can achieve or lose with new technology (eCRM) and uncertainty about where to start.
- Lack of leadership: another barrier in eCRM implementation is poor leadership due to poor focus and effort of eCRM leaders on just functional heads, without having an e-CRM plan or perspective experience. Therefore, they should focus on working on the overall strategy of an organisation. In the meantime, as eCRM is based on understanding customers' needs, in order to achieve successful implementation of eCRM organisations must have a proper leader who has commitment and responsibility to meet customer's needs.
- Lack of vendors supports: vendors expect that introducing and providing the new tools

to organisations will be responsible for addressing the essential eCRM factors in many areas of businesses. However, just highlighting the eCRM aspects that are involved in their products, as eCRM are not just an information tool, it is crucial for organisations to establish a clear-formed eCRM strategies and strong management support to achieve eCRM success. In addition, vendors need to convince their customers that by eCRM implementation, they can solve all the problems that they currently have.

Factors such as commitment, resources, and governance, which are considered as organisational factors, can influence e-commerce development. Several factors also affect also affect the evaluation of the return from eCRM adoption and use of technology (Dafoulas & Essawi, 2006). For example, management of support and responsibility makes a significant contribution to success. Therefore, management and organisational factors have a powerful impact on the success of IT implementation.

ECRM readiness means the ability of an organisation to accept eCRM implementation, and investigating the main factors affecting eCRM readiness can help assess this ability. Unfortunately, there is no eCRM readiness assessment tool introduced in the literature, and there is a lack of empirical research in terms of eCRM readiness and maturity. Therefore, this research attempts to identify the main factors affecting eCRM readiness in Iranian banks and introduces an eCRM assessment readiness and maturity tool to fulfil this gap.

ECRM maturity is the maturity of eCRM operations in an organisation and can be illustrated by maturity models. A maturity model can be defined in order to judge the development status of processes within an organisation. A maturity model identifies key practices required to increase the maturity and comprises several degrees of maturity that an organisation can reach, usually in many years, following a step-by-step evolutionary process (Sohrabi et al., 2010; Gamm et al., 2005).

Assessment of eCRM maturity not only provides a current level of eCRM in an organisation but also giving feedback as well as suggestions on areas that may need improvement and helps organisations to identify their shortages in terms of eCRM implementation. Therefore, it is essential to consider all aspects related to the eCRM initiatives and report and benchmark the current capabilities by assessing eCRM maturity which helps the evaluation of maturity and makes it possible to rate an organisation's compliance with best practices. To summarise, assessing readiness and maturity of eCRM helps organisations, especially banks, to determine whether they are ready for eCRM and where they are in terms eCRM implementation. In other words, there is a strong connection between readiness and maturity, readiness help banks to

assess where they bank is today, are they ready for eCRM? If yes, it shows they have a basic level of maturity (level 0), therefore, now it is necessary to evaluate that how they improved their capabilities and performance. This can be done using eCRM maturity assessment. In the next section, the factors affecting eCRM readiness and maturity are discussed. It gives an overview of success and failure factors, which can be used for developing the research framework.

2.9.1 eCRM readiness and maturity failure/success factors

As mentioned, organisational and technological readiness affects e-readiness. Organisational factors such as management commitment, employees' skills, and techological factors such as infrastructure are critical for e-readiness. Critical success factors (CSF) as an activity guarantee a successful eCRM implementation and if they are neglected or disregarded the result would be a failure and turn the critical success factors to critical failure factors (Eid, 2007). Therefore, it is essential to pay attention to these factors as they are crucial to any organisation for eCRM deployment.

Despite advances in IT and huge investment in this field, most CRM/eCRM implementations confront challenges and, unfortunately, sometimes failure (Almotairi, 2009, Salloum & Ajaka, 2013). These failures can be related to many issues, such as lack of management commitment, inefficient change management, lack of corporate customer focus, or people, process, and technology issues (Sundar et al., 2012; Kale, 2004). According to Sundar et al. (2012), this failure can be caused by organisations focusing on higher return on investment rather than customer satisfaction, which is one of the benefits of eCRM. However, underestimating the return on investment is a big mistake as eCRM implementation is beneficial for both the organisation and the customer, and this is one of the main benefits of eCRM deployment for organisations.

The high failure in eCRM implementation, rated between 35% to 75% (Merkle, 2013; Economist Intelligence Unit, 2007; VB Insight, 2015), illustrates the importance of investigating the factors that affect eCRM readiness and maturity, although some failure is due to the technological issues, although too much focus on technological issues rather than human and organisational issues can create a gap in achieving success (El Essawi & El Aziz, 2012; Zablah et al., 2004; Shum et al., 2008). According to Boulding et al. (2005), due to the importance of the role of employees who are an integral part of the delivery of eCRM activities,

eCRM organisational issues deserve more consideration and attention by an organisation.

ECRM implementation can be used as a catalyst for organisational change due to the nature of eCRM projects which require shifting from existing processes towards a more customer-oriented culture, integrative technology, and cross-functional cooperation (Shum et al., 2008), as well as helping organisations to achieve their customer-centric operations goals and take advantage of customer data collection. One of the crucial factors in organisational change is individual commitment. Employees who are involved in eCRM activities need to adapt to a new way of thinking, manifested by emotional and/or behavioural changes, and where they are committed to their organisation they can perform better work and also have a more positive attitude towards change initiatives (Shum et al., 2008). Employee resistance to change (El Essawi & El Aziz, 2012; Xu et al., 2001) is one of the important factors for eCRM failure. Employee commitment to change can be fostered by a facilitative leader who encourages employees (Shum et al., 2008) in order to consider and accept change through listening to them, and clarifying the eCRM vision for them. Therefore, employee resistance to change leads organisation to failure and, in order to assess eCRM readiness, this factor should be investigated by decision makers by defining a clear strategy.

According to Merkle (2013), a 63% fail rate exists for CRM initiatives. They surveyed 352 senior-level organisations based in the US regarding their CRM initiatives, and how they react to these initiatives. Their findings show that high-profit companies view CRM as a key driver for their success compared to those companies who are low-growth. One reason revealed in their survey was that senior leadership in high-growth companies understood the value of CRM and its importance for their organisation's success compared to low-growth companies' senior leadership who view CRM just as a tactical tool. This study also shows that CRM initiatives fail primarily due to many factors including lack of management bandwidth, lack of clear ownership of customer insight, CRM not being an IT priority, and lack of executive sponsorship.

Recent research by Forrester (2016) shows that CRM success requires a focus on people and not technology. Their survey illustrates the issues like people, process, strategy, and technology. Rigby et al. (2006) express that, after 10 years analysing customer-loyalty initiatives, both successful and unsuccessful, at more than 200 organisations in different industries, one of the reasons for CRM failure and CRM backfire is that executives just do not know precisely what they are implementing, how much the cost is, and how long it takes. It is easy to confirm this

statement is correct by merely asking the managers to define CRM/eCRM.

According to Rigby et al. (2006), it is crucial to avoid four perils of CRM. These perils are:

1- Implementing CRM before creating a customer strategy

CRM implementation without conducting segmentation analysis and determining marketing goals would be like trying to build a house without engineering measures or an architectural plan. Therefore, as the purpose of CRM and eCRM is to attract and retain customers, it is necessary to have a customer-acquisition and retention strategy. Therefore, this shows the importance of customer strategy for eCRM deployment and this needs to be investigated before any implementation.

2- Rolling out CRM before changing an organisation to match

Organisations need to be customer-focused before any CRM implementation and revamp the key business processes that relate to customers, from customer service to order fulfilment. CRM success depends not only on strategy but also on the restructuring of an organisation's processes, such as performance measures, compensation systems, training programs, and job description, in order to help an organisation to meet customers' needs more effectively. Due to the high failure rate (87%) caused by lack of adequate change management, managers need to change the internal structure and system, and organisations also must adopt customer-centric philosophies and alter their organisational culture accordingly before any CRM/eCRM implementation, otherwise it becomes like repainting a house without sanding the walls first. This illustrates the importance of being a customer-centric organisation, especially for banks. Therefore, banks need to make sure that they do business with their customers in a way that provides a positive customer experience in order to build good relationships. Being a customer-oriented bank is another factor for readiness of eCRM and must be considered as an important factor in putting customers first and at the core of the business by creating a good strategy.

3- Assuming that more CRM/eCRM technologies are better

As CRM and eCRM are not just technology, relationships with customers can be achieved by employees' awareness from customer's needs. Therefore, merely relying on a technological solution may be a costly pitfall. ECRM success requires to focus on people rather than on technology because technology is just an element and cannot handle a relationship. Therefore, when banks are assessing their readiness for eCRM, they not only need to consider technological aspects but must focus on strategic and

cultural aspects within them.

4- Stalking, not wooing, customers

Unfortunately, executives ignore this kind of relationship with their customers and do not consider this when using CRM/eCRM. Therefore, managers need to recognise these relationships based on the nature of their businesses, considering what kind of relationship they and their customers want from each other to prevent disastrous consequences such as creating a relationship with wrong customers or with right customers but in a wrong way. Successful eCRM in banks depends on strategy rather than just technology. One method is to create a customer strategy which helps employees to understand where they are going and why, and also aligned to their processes. Managers of banks need to lead effectively and manage change, showing e-CRM support teams how to achieve their goals through new processes, and they must know that technology is just a facilitator in the process of customer relationship management.

According to Chalmeta (2006), factors which cause CRM/eCRM failure are:

- Thinking of CRM/eCRM as a pure technology
- Lack of management support
- Lack of customer-centric culture
- Lack of readiness process
- Poor quality data
- Lack of change management
- Lack of vision and strategy
- Lack of involving the final user in designing CRM/eCRM solutions

ECRM can fail to meet its objectives because of anything and for different reasons, but some of them can be avoided. These reasons, in general, are caused by the complexity of organisational and technical issues that are related to eCRM implementation. Kale (2004) argued that there are seven reasons behind CRM failure which are:

- Lack of customer-centric vision
- Viewing CRM as a technology
- Insufficient appreciation for customer lifetime value
- Underestimating the importance of change management
- Underestimating difficulties related to data mining and data integration,

- Failing in re-engineering business process

As mentioned, successful CRM implementation depends on the success of two perspectives: an information system (a suitable system) and project perspectives (predefined objectives). However, CRM applications will fail without consideration of customer empathy (Gartner, 2016) and skilled employees can achieve this within an organisation. Therefore, in order to manage a successful eCRM implementation, banks need integrated and balanced approaches to all technology, process, and people aspects. Recent research by Forrester (2016) shows that CRM success requires a focus on people and not technology. Their survey illustrates the issues like people, process, strategy, and technology.

Organisations can improve their customer service, satisfaction and attain customisation as an essence of a customer-oriented organisation through employing information technology and deploying CRM/eCRM systems (Navimipour & Soltani, 2016; Karimi et al., 2001; Stefanou, 2003). Therefore, as mentioned in the definition, in order to achieve CRM and eCRM objectives, obtaining customer-related knowledge as the main asset of a bank is essential. Unlike information or data, knowledge is embedded in people not in information technology and in order to manage customer relationships banks need to primarily develop a culture, motivating employees at all levels towards learning and facilitating them in capturing, selecting, using, and sharing knowledge by providing the means and the technology required to do so. It is evident that the knowledge management (KM) is one of the important factors regarding eCRM implementation and neglecting this factor and its sub-factors can lead to eCRM failure. Therefore, customer knowledge should be considered as a valuable activity for any bank to survive in the competitive market by collecting and analysing customer data and helping in the maturity and the success of eCRM.

Given that information about customers is important and considered to be the lifeblood of e CRM, the development and maintenance of consistent, high-quality data is crucial for eCRM success. Many organisations neglect the importance of data quality and consistency, thinking that data management is a boring subject, but they soon start to take notice when they face a lot of problems, such as a project cannot go live or how much they must pay to solve and overcome institutionalised data quality and consistency. Therefore, data quality is a challenge in the CRM and eCRM field (Peltier et al., 2013) and should be considered as an important factor for successful eCRM implementation. Higher quality data means more valuable eCRM and inadequate and inaccurate data prevents eCRM success. Banks which consider data quality are

much mature regarding eCRM than others with poor quality data. This can be a reason to assess eCRM maturity in banks by proposing an eCRM maturity tool.

Another study by Sin et al. (2005) illustrates that there is an impact of CRM on marketing performance, such as trust or customer satisfaction, which can be achieved through CRM/e-CRM deployment in organisations. Therefore, another important factor for the eCRM success is customer satisfaction. Satisfaction is an overall measure of validity. Satisfaction can be used as a measure to assess the success of IS in general, and the eCRM in particular (Nejatian et al., 2011). Customer satisfaction influences profitability, customer retention and loyalty, and therefore improved customer satisfaction creating long-term relationships with customers is one of the overall goals of eCRM.

In addition, employees' satisfaction is one of the factors which can gurantee the success of eCRM (Navimipour & Soltani, 2016) and can prevent employees' resistance to any technology adoption within an organisation. Therefore, to prevent any resistance, it is important to satisfy employees by improving communication, creating a growth atmosphere, encouraging and rewarding them. Organisational change is inevitable with eCRM implementation, and this change can have an effect on employees but what guarantees the success of eCRM comes from employee's actions (Shum et al., 2008).

Table 2-1 illustrates the factors affecting eCRM success and failure. As can be seen, when lack of management commitment considers as a failure factor, management support is a key for eCRM success. Corporate strategy has different components such as vision, strategies (to reach the vision), and goal. IT investment is vital, but lack of IT infrastructure is an obstacle for eCRM. Organistional culture is another important dimension and factors such as employee's acceptance and skill are important for eCRM success. In contrast, poor culture affects employees and leads an organisation to failure. Therefore, each factor must be presented and assessed in order to have a successful eCRM.

Table 2-1: Factors affecting eCRM success/failure

Factor	Reference

Strategy	**Chen & Popovich (2003); Greenberg (2009); Sohrabi et al., (2010); Eid (2007); King & Burgess (2007); Alt and Puschmann (2004); Wilson et al., (2002); Da Silva & Rahimi (2007); Mendoza et al., (2006); Goodhue et al., (2002); Croteau & Li (2003); Chen & Chen (2004); Drucker (2000); Renner (2001); Arab et al., (2010); Gartner (2001); Reynolds (2002); Azad et al., (2014); Ocker & Mudambi (2002); Almotairi (2010); Eid (2007); Chalmeta (2005); Siebel (2004); Wilson et al., (2002); Padmavathy et al., (2012); Rigby et al., (2002)**
Culture	**Coltman (2006); Simposon (2002); Eid (2007); Chaudhry**

	(2009); Ali & Altai (2005); King & Burgess (2007); Chen & Chen (2004); Chalmeta (2005); Wilson et al., (2002); Witt (2000); Basahel (2012); Boulding et al., (2005); Payne & Frow (2006); Arab et al., (2010); Darvish et al., (2012); Azad et al., (2014); Ocker & Mudambi (2002); Almotairi (2010); El Essawi & El Aziz (2012)
People	Sundar et al., (2012); Sin et al., (2005); Reynolds (2002); Darvish et al., (2012); Eid (2007); Rigby et al., (2006)
Technological readiness	Chen & Chen (2004); Greenberg (2009); King & Burgess (2007); Eid (2007); Da Silva & Rahimi (2007); Drucker (2000); Darvish et al., (2012); Almotairi (2010); Croteau & Li (2003)
Top management	Da Silva & Rahimi (2007); King & Burgess (2007); Mendoza et al., (2006); Eid (2007); Croteau and Li (2003); Goodhue et al., (2002); Chen & Chen (2004); Alt & Puschmann (2004); Basahel (2012); Arab et al., (2010); Harrigan et al., (2011); Eid (2007); Ling and Qi (2011); Alshawi et al., (2011); Wilson et al., (2002)
Knowledge management	Chen & Chen (2004); Croteau et al., (2003); King & Burgess (2007); Gartner (2001); Boulding et al., (2005); Thomas & Sullivan (2005); Canhoto (2009); Radfar & Malek (2012); Ocker & Mudambi (2002); Ling & Qi (2011); Sedigh & Alikhani (2013); Thakur (2014)

Employees eCRM perceptions	**El Essawi & El Aziz (2012); Sundar et al., (2012); Arab et al., (2010); Kavitha (2013); Gartner (2016)**
IT capability	**Bahrami et al., (2012); Harrigan et al., (2011); Gartner (2001); Azad et al., (2014); Ahmad et al., (2012)**
Number of channels	**Kennedy (2006); Harrigan et al., (2011); Greenberg (2009); Harridge & Quinton (2009); Kaplan & Haenlein (2012); Nguyen & Mutum (2012); Liu et al., (2012); Roschmann & Ziyadullaeva (2011)**
Integration between communication channels	**Kennedy (2006); Harrigan et al., (2011); Thomas & Sullivan (2005); Eid (2007); Ling & Qi (2011); Roschmann & Ziyadullaeva (2011)**
Employee acceptance	**Arab et al., (2010); Sin et al., (2005); Eid (2007); Kavitha (2013)**
Training	**Basahel (2012); Arab et al., (2010); Peppers & Rogers (2010); Bose (2002); Eid (2007); Kavitha (2013); Kavitha (2013); Ahmad et al., (2012); Rigby et al., (2006)**
Commitment	**Basahel (2012); Padmavathy et al., (2012); Nguyen & Mutum (2012); Darvish et al., (2012); Roschmann & Ziyadullaeva (2011); Eid (2007); Amiri et al., (2010); Mendoza et al., (2007); Shum et al., (2008)**
Awareness	**Nguyen & Mutum (2012); Peppers & Rogers (2010); Moreno & Melendez (2011); Azad et al., (2014); Kavitha (2013); Sedigh & Alikhani (2013); Chalmeta (2005); Da Silva & Rahimi (2007); Eid (2007); Rigby et al., (2006); Gartner (2016)**
Measurement	**Padmavathy et al., (2012); Gartner (2001); Dubrovski**

	(2001); Azad et al., (2014); Azad et al., (2014); Da Silva & Rahimi (2007); Chalmeta (2005); Eid (2007)
Overall plan	Gartner (2001); Nguyen & Mutum (2012); Reynolds (2002); Darvish et al., (2012); Azad et al., (2014); Ocker & Mudambi (2002); Chalmeta (2005); Da Silva & Rahimi (2007); Rigby et al., (2006)
Goals	Nguyen & Mutum (2012); Darvish et al., (2012); Eid (2007); Kim et al., (2012); Alhaiou (2011); Chen & Popovich (2003); Rigby et al., (2006)
IT policy	Bahrami et al., (2012); Sin et al., (2005); Azad et al., (2014); Ocker & Mudambi (2002); Da Silva & Rahimi (2007); Chen & Popovich (2003); Rigby et al., (2006)
Data analytics	Bahrami et al., (2012); Dyche (2002); Kennedy (2006); Zikmund (2003); Payne & Frow (2006); Tan et al., (2002); Arab et al., (2010); Gartner (2001); Boulding et al., (2005); Nguyen & Mutum (2012); Eid (2007); Da Silva & Rahimi (2007); Eid (2007); Ryals & Payne (2001); Bose (2002); Swift (2000); Greenberg (2009); Rigby et al., (2002); Alhaiou (2011); El Essawi & El Aziz (2012)
Infrastructure	Bahrami et al., (2012); Arab et al., (2010); Padmavathy et al., (2012); Sin et al., (2005); Gartner (2001); Reynolds (2002); Roh et al., (2005); Ahmad et al., (2012)
Customer satisfaction	Sundar et al., (2012); Kheiri et al., (2012); Arab et al., (2010); Gartner (2001); Alhaiou et al., (2009);

	Peppers & Rogers (2010); Nguyen & Mutum (2012); Eid (2007); Azad et al., (2014); Yazdanpanah & Gazor (2012); Roh et al., (2005);Ahmad et al., (2012); Ling & Qi (2011); Gartner (2016)
Trust	Nguyen & Mutum (2012); Ahmad et al., (2012)
Technology	Sundar et al., (2012); Bahrami et al., (2012); Kennedy (2006); Arab et al., (2010); Padmavathy et al., (2012); Sin et al., (2005); Nguyen & Mutum (2012); Yazdanpanah & Gazor (2012); Roh et al., (2005); Almotairi (2010); El Essawi & El Aziz (2012); Padmavathy et al., (2012); Chen & Popovich (2003); Alhaiou (2011)
Loyalty	Arab et al., (2010); Gartner (2001); Alhaiou et al., (2009); Peppers & Rogers (2010); Eid (2007)
Service quality	Alhaiou et al., (2009); Alhaiou et al., (2009); Peppers & Rogers (2010); Azad et al., (2014)
Convenience	Alhaiou et al., (2009)
Speed	Alhaiou et al., (2009); Singh (2002); Sivarak et al., (2011)
Team work	Basahel (2012); Darvish et al., (2012); Chalmeta (2005); Mendoza et al., (2007)
Vision	Darvish et al., (2012); Gartner (2001); Darvish et al., (2012); Ocker & Mudambi (2002); Eid (2007); Chalmeta (2005); Goodhue et al., (2002); Nguyen et al., (2007); Kale (2004)

Security/Privacy	**Alhaiou et al., (2009); Kavitha (2013); Ahmad et al., (2012); Ling & Qi (2011)**
Data quality	**Alhaiou et al., (2009); Yazdanpanah & Gazor (2012); Nelson (2001); King & Burgess (2007); Mendoza et al., (2006); Eid (2007); Roh et al., (2005); Goodhue et al., (2002); Peltier et al., (2013); Kale (2004)**
Responsiveness/Efficiency	**Yazdanpanah & Gazor (2012); Roh et al., (2005); Bompolis & Boutsouki (2014)**
Value	**Leo et al., (2005); Peppers & Rogers (2010); Nguyen (2011); Kaplan & Haenlein (2012); Greenberg (2009); Azad et al., (2014)**
Social media	**Nguyen (2011); Nguyen & Mutum (2012); Harridge & Quinton (2009); Kplan & Haenlein (2010); Greenberg (2009); Quinton & Harridge (2010)**
Learning about customers	**Nguyen & Mutum (2012); Peppers & Rogers (2010); Payne & Frow (2006); Galtisky et al., (2011), Radfar & Malek (2012); Madhoushi et al., (2011); Gartner (2016)**
Employees satisfaction	**Yazdanpanah & Gazor (2012); Shavazi et al., (2013); Boulding et al., (2005); Navimipour & Soltani (2016)**

As can be seen in this section and Table 2-1, critical success factors (CSFs) are characteristics, conditions or variables and as the few key activities in which favourable results are necessary for a particular manager to reach their goals, can significantly impact on an organisation trying to flourish. CRM/eCRM CSFs have a catalyst-like influence on the success of CRM/eCRM (Eid, 2007). Given the high rate of CRM/eCRM failure, 56% (Economist Intelligence Unit, 2007), 63% (Merkle, 2013), these CSFs are important for banks attempting to remain competitive in the dynamic marketplace and aiming for eCRM success.

Therefore, banks need to understand and assess some of these factors before eCRM implementation for eCRM readiness evaluation. Also, after eCRM implementation, in order to establish eCRM readiness which can lead banks to improve their eCRM solutions and prevent failure, eCRM maturity assessment is essential. Therefore, some of these factors can be used for eCRM maturity evaluation within banks. In the next section, existing eCRM readiness and maturity frameworks will be reviewed which, along with CSFs, assists in answering the research questions by proposing and testing a framework.

2.10 CRM and eCRM frameworks

Investigating the CRM and eCRM models and frameworks helps the researcher to be familiar with existing models and frameworks in the CRM and eCRM area in identifying the gaps and thus attempts to propose a model.

Eid (2007) introduced a conceptual model for CRM implementation. This model (Figure 2-2), drawn from IT literature and theory of relationship marketing, consists of three parts: CRM enablers, CRM effectiveness, and CRM success. Eid's model deals with linkage of these three sets of hypotheses as follows:

- effect of strategical, tactical, and operational factors, such as CRM CSFs, on relationship quality, transaction quality, and reduced cost as CRM effectiveness
- expresses the relationship between CRM CSFs and CRM success, which is customer retention in this model
- expresses the impact of relationship quality, transaction quality, and reduced cost as CRM effectiveness on customer retention

This model gives useful and practical guidance for organisations in order to implement CRM successfully. It also supplies them with CRM CSFs that may be important and helps them to remain competitive in the dynamic marketplace. As mentioned, these CSFs are categorised as:

- Strategic level: Successful CRM implementation depends on how the strategic goals defined for an organisation, top management knowledge about CRM, change in organisational culture, individual employees who are building blocks of customer relationships, and benchmarking shape the CRM strategic direction.
- Tactical level: in this level employees' acceptance, CRM selection, employees' training, employees' updating of CRM system, and integration with other systems are major challenges and should be concerned.
- Operational level: this level places emphasis on enterprise performance metrics for

CRM, realistic CRM implementation schedule, customer orientation and data mining, and personalisation as critical in the success of CRM implementation.

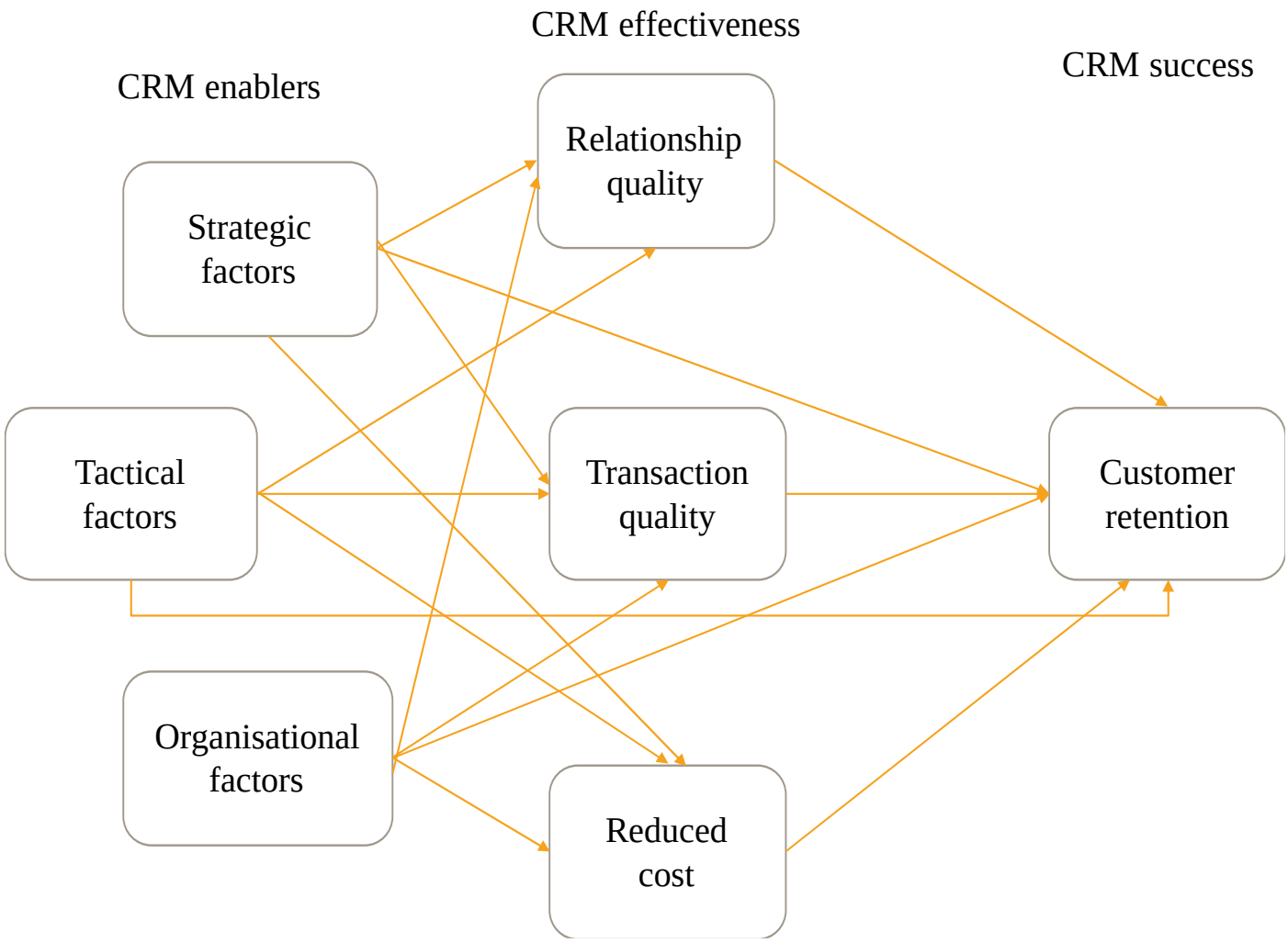


Figure 2-2: CRM implementation model (Eid, 2007)

Furthermore, Almotairi (2009) proposed another conceptual framework for successful CRM implementation, based on integrating CRM components, CRM success factors, and CRM implementation phases. This framework was developed by conducting an extensive review of the CRM literature and in particular CRM success and failure factors. This framework consists of three phases: pre-implementation, implementation, and post-implementation phases. In the pre-implementation phase, support of top management is essential for the CRM implementation process and top management commitment can be gained by CRM readiness assessment in terms of its components, which are people, process, and technology. The strategy also needs to be developed, aligned and communicated to employees in this phase. In the implementation phase, this strategy will be put into action by CRM project implementation

focusing on the CSFs within each CRM component and each success factor will be measured to assure the successful CRM implementation. Finally, the post-implementation phase is focused on overall performance by measuring the impact of CRM implementation on marketing and finance of an organisation and assessing the impact of other external factors.

Stefanou & Sarmaniotis (2003), proposed a conceptual framework of CRM development stages. Their proposed framework test in 1000 Greek organisations illustrated that just half of the organisations adopted CRM philosophy. Their proposed CRM model helps organisations to recognise the CRM system employed and specifies the basic parameters of the various CRM development stages in order to assist organisations to identify their problem and improve their customer-based information system.

Their model's first stage is the non-IT-assisted CRM stage, and it is preliminary, so it means it has very limited, or no, use of IT at all. The second stage of CRM development is about IT-assisted CRM and is a manual process that uses IT to enhance the organisation's relationships with customers, as well as to analyse customer data and to focus on traditional channels, such as call centres, fax, and spreadsheets. (Stefanou & Sarmaniotis, 2003). The third stage of CRM development focuses on using many technologies to customer interaction and calls IT-automated CRM, these technologies include telephone/customer integration and the Internet. Organisations at this level can easily gain access to customer profiles, track their customers purchase trends and have active operational CRM systems aimed at business process optimisation and sales force automation (Stefanou & Sarmaniotis, 2003).

The last stages of CRM development are an integrated CRM or i-CRM. This level shows that an organisation is at a high level of service and customer satisfaction and leads to customer personalisation. This level is achievable when an organisation successfully employs sophisticated CRM information systems, which are analytical, in order to monitor customer preferences. Therefore, this CRM development stage can provide a good guideline for the level of CRM in the business, which is essential for competitive advantages.

Zablah et al. (2004) introduced a framework in order to achieve CRM success. They outlined a framework that identifies the key steps towards CRM success as a firm's ability to effectively build and maintain a profit-maximising portfolio of customer relationships. The first stage of their framework focuses on specifying relationship management strategy. It means a firm needs to plan and allocate available resources in order to create a relationship with customers, based on customers' value to the firm, which is different in terms of their profitability to an organisation. In addition, this strategy should be based on maximising the long-term

profitability of the firm and value that customers derive from their relationships to the organisation.

The next step is to define CRM processes and assign process roles. This step includes a description of the relevant processes, providing a detailed mapping, sub-processes, and allocation of the responsibilities for process activities among individual and groups in order to define CRM processes and help employees to understand their expected tasks. Managers then need to assess the state of CRM capabilities in the next step, such as knowledge management and interaction management capabilities, in order to ensure that they have the necessary resources to execute CRM process-related activities effectively. Also, in the next step, managers can enhance their organisation's existing capabilities by adopting new technologies to ensure that a variety of resources are available to execute CRM processes. Finally, on the completion of this stage, CRM processes and sub-processes will be monitored, evaluated, and improved in order to help decision-makers ensure that the processes are delivering the appropriate outcomes and also enhance their organisation productivity by finding new ways.

Swift's model (2000) focuses on four key elements in the primary process of CRM: interaction, connection, recognition, and the establishment of relationship in an organisation in order to facilitate and realise CRM goals. Gartner's model (2001) is based on this model as CRM designs require a framework to ensure that organisational plans are considered on a strategic and integrated base. Ocker & Mudambi's (2002) framework to assess organisational readiness to deploy CRM includes three dimensions, which are intellectual, social, and technological. Another CRM strategy framework was proposed by Payne and Frow (2005), and it identified five key cross-functional CRM processes: a strategy development process, a value creation process, a multichannel integration process, an information management process, and a performance assessment process. Some other important factors for eCRM readiness are organisational culture, the perception of technology by employees, employees and decision makers' perceptions for eCRM, and corporate strategy (El Essawi & El Aziz, 2012). These findings can help researchers who want to investigate eCRM readiness further.

An eCRM evaluation framework by Lin and Liu (2005), can guide senior managers for justifying and assessing their eCRM projects and also to realise expected eCRM benefits. This framework places emphasis on identifying the investment needs and then ensuring that organisations align their business goals and objectives with organisational strategies and expected benefits from eCRM initiatives, which helps an organisation to assess its level of

maturity. IT and change management maturity are important factors for effective e CRM implementation in an organization, and their maturity depends on identifying the main stakeholders and attempting to get their support, involvement, and engagement in the processes (Lin & Liu, 2005; McKay & Marshall, 2004). In this eCRM evaluation framework, if the assessment of these factors shows this to be satisfactory, then an organisation can prepare its pre-project justification document and make a business case for the project to go ahead, but if not, the organisation will need to stop these initiatives for a while.

After project approval, the organisation is ready to adopt IS/IT investment evaluation and benefit realisation processes for eCRM projects. These processes can identify and illustrate the mitigating risks within the organisation, accountability and responsibility for achieving benefits and tracking cost. In order to bring the expected benefits and achieve evaluation objectives, it is necessary to apply the iterative processes to assess, monitor, review, and manage continuously. Consequently, according to Lin and Liu (2005), this evaluation brings timely feedback and refinement to organisations' eCRM processes, vision, and strategies in order to ensure support of top management and make sure that their organisation is on the right track.

All these frameworks are relevant to this research because, as mentioned above, some of them put emphasis on the importance of strategy, which is essential for starting CRM and eCRM, and businesses without strategies lead to failure. Also, some frameworks emphasise technology importance; for example, IT infrastructure or integration between communication channels. Organisational culture importance is emphasised in different models. Each factor in models can be used and added in the proposed model for this study. For example, strategy from Eid's and El Esaawi & El Aziz's model, top management support from Lin & Liu and Almotairi 's model, cultural factors from Eid's and Ocker & Mudambi's model. Despite the richness of literature in terms of technological issues, there are few types of research on eCRM readiness, maturity and perceptions, especially in developing countries.

Conversely, there is no research to show that organisational culture is an important dimension for eCRM readiness in the Iranian context in particular. Therefore, it can be concluded that there is a line between factors in the existing models and the current study model. In other words, the identified factors from existing models can be added to the proposed readiness model to evaluate eCRM readiness in banks. In addition, this study focuses not only on collecting information about the use of technical aspects but also introducing social aspects and other factors as different dimensions of the proposed model for assessing eCRM readiness and

maturity in Iranian banks.

After successful eCRM adoption in any organisation, the next step is to continuously improve and develop the eCRM within the organisation in order to maintain the success. This can be evaluated through eCRM maturity assessment. Organisations, including banks, are searching for guidelines and methodologies for judging their degree of maturity. Assessing eCRM maturity helps organisations to understand the maturity status of processes which can be given by eCRM maturity models. An eCRM maturity model comprises several degrees of maturity that a bank can reach. Therefore, just focusing on eCRM readiness and abandoning the functionality can condemn the businesses to failure concerning eCRM adoption.

Maturity models provide a method for judging the development status of processes within a bank and for identifying key practices that are required to increase the maturity of these processes and comprise several degrees of maturity that banks can reach, usually throughout years in a step-by-step evolutionary process. Maturity models can be used to identify the current and optimal position of eCRM in an organisation. Maturity models are available to organisations to reduce the risk of failure which can stop them from gaining eCRM benefits. As mentioned, a maturity model consists of several degrees of maturity that an organisation, in years, can reach in a step-by-step evolutionary process, hence knowing the current level of eCRM maturity is important (Gamm et al., 2005). According to Sohrabi et al. (2010), maturity models can be defined in order to judge the development status of processes within an organisation and to identify key practices required to increase the maturity.

Banks need to assess eCRM maturity for deriving programs and initiatives which can effectively improve their electronic customer relationship management. Therefore, one of the important questions is: Given the market (bank) competition, what eCRM activity needs to be implemented next to fulfil the success of eCRM? Thus, the proposed eCRM maturity model is developed against the dimensions and factors affecting eCRM success. These factors can be a combination of readiness factors with some of the some of the essential dimensions and their factors which provide direct input parameters for the development of an eCRM maturity model and are essential for such as comparable model.

According to Gamm et al. (2005), a maturity model for CRM should include topics, activities and precise definitions. Therefore, in this research, the proposed eCRM maturity model includes dimensions, its associated factors, and the statement for each factor. The proposed eCRM maturity model is composed of five levels that reflect the different maturity stages of eCRM for dimension to provide guidelines to banks in order to judge their current eCRM status in

each of the important areas for success. The classification of each level of maturity considers a topic-oriented evolution approach.

Major maturity models in the CRM and eCRM field were identified from the literature. Gartner (2001) introduced eight building blocks to being successful in CRM. Each of these blocks can be rated on a 0 to 6 (poor to excellent) scale. These are a vision, strategy, valued- customer experience, organisational collaboration, processes, information, technology and metrics. They surveyed 1000 companies based on their CRM maturity and found that there is a correlation between CRM maturity and profitability. Therefore, assessing CRM and eCRM maturity in banks, which have a direct or indirect relationship with customers, is vital to be a winner in eCRM and competitive advantage.

Gamm et al. (2005) provided another maturity model. Their model consists of six CRM areas in five levels. Their model provides a holistic framework to mobile carriers in order to judge their CRM maturity, based on each area. This maturity model examines the degree of completeness of CRM activities based on their implementation. The six CRM areas of this model are a strategy, marketing, sales, service, customer touch points & channels, and analytical CRM & customer insight.

A CRM maturity model proposed by Sohrabi et al. (2010) proposes stepwise implementation and measurement of CRM maturity, based on critical success factors. Their maturity model (CRM3) consists of five levels:

1. Initial level: CRM implementation process is chaotic
2. Aware level: considers strategy and culture factors
3. Defined level: CRM implementation processes are documented, standardised and integrated into a standard implementation process
4. Quantitatively managed level: CRM processes and activities are controlled and managed based on quantitative models and tools
5. Optimising level: contains information technology and knowledge management factors

Organisations, including the banking industry, are searching for guidelines and methodologies for judging their degree of eCRM maturity and competitiveness. According to Gamm et al. (2005), competitive pressures, changing market environments and increased customer demands are driving top management to find an appropriate answer to the following questions:

1. What CRM quality needs to be provided to fulfil the increased customer demands?

2. In addition to existing CRM programs, which other specific CRM topics need to be implemented? Does the evolutionary path exist?
3. Where we are now- what is our current level of CRM maturity?

The development of the proposed eCRM maturity model in this research was affected by the existence of theoretical models, which are already established and considered different models for assessing maturity in general and eCRM maturity in particular.

The maturity-modelling concept has already been applied to other domains and industries. In order to address the issue, it is necessary to find out which maturity models provide valuable insights and inputs for developing the e-CRM maturity model for this study. By reviewing the literature, it is evident that none of the models for eCRM maturity can be characterised as the ultimate solution. Nevertheless, a large number of useful insights and learning is used for developing the proposed eCRM maturity model.

As can be seen, several maturity models for CRM have been introduced, but there is a lack of a comprehensive maturity model for eCRM which focuses on dimension and factors regarding eCRM in the literature. Existing models in this field can help to identify the important aspects of CRM maturity in order to develop and propose a new model in the eCRM field, which suffers from a shortage of literature. A maturity model is a high-level blueprint used to define the level of an organisation in the CRM and eCRM lifecycle and how it is possible to move to the next level, which has a set of specific processes, by using tools and strategies.

Companies have introduced most of the models, but there are only a few who have been introduced by academics. Also, there is a lack of a comprehensive model in the current literature. Therefore, it is necessary to take into consideration the development of a maturity model based on eCRM factors for banks. As mentioned, readiness factors with different criteria can be applied in the proposed maturity model as readiness leads to a basic level of maturity. In addition, organisations neglect continuous improvement of their processes after eCRM deployment and think that implementation alone means success but, as customer-centric organisations, they need to be aware that implementation is just the beginning and it gives the basis for constant improvement, which is vital for successful eCRM. As the purpose of this research is to propose an eCRM readiness/maturity assessment tool for banks, it is necessary to build an eCRM readiness and maturity framework based on the above readiness and maturity model to facilitate the research purpose.

2.11 eCRM adoption in the banking industry

ECRM has become a popular concept worldwide and the use of technological communications, such as the Internet, has changed businesses activities worldwide. Due to the importance of customers for businesses, banks have paid more attention to them and put them at the centre of their organisations. Consequently, regardless of type and size of the organisations, it is crucial for banks to pay attention to their relationships with customers. Hence, banks need to focus on creating and improving their relationship with their customers by adopting an eCRM solution, which can be beneficial for both the banks and their customers.

ECRM is a comprehensive business and marketing strategy that integrates technology, process, and all business activities based on the customer. Many banks fail in the implementation of eCRM because they look at it as a just technology, and also many studies address the problem of the high failure from different perspectives, such as strategy development and success factors (Almotairi, 2009). Hence, it is necessary to examine the main factors affecting eCRM readiness and maturity, such as cultural context, corporate strategy or employees' perceptions in the banks, which are the focus of this study, to prevent any failure.

In order to adopt CRM and eCRM initiatives, banks need requirements such as technological, human, and organisational requirements. Regarding technical requirements, banks need to adopt technological factors, such as the Internet, CRM software, enterprise resource planning (EPR), and data warehouses (Chen and Popovich, 2003). These factors can provide a necessary base for successful CRM implementation (Almotairi, 2009). Another requirement for CRM and eCRM implementation is the human factor or people who form a problematic part of the CRM (Almotairi, 2009; Sin et al., 2005) and are necessary for successful CRM and eCRM implementation. Human requirements consist of two different perspectives: customers' perspectives, which means banks need to assess customers' needs, and employees' perspectives, which need to communicate CRM and eCRM strategies to employees in order to deliver value, culture, and objectives to the customer-oriented organisation. In order to assess their eCRM readiness and maturity, banks not only need to focus on their technological aspects, but they also need to consider cultural aspects. Therefore, the proposed framework for readiness and maturity must embed these factors to help banks to evaluate their eCRM.

Organisational requirements which emphasise transforming the banks from being product-oriented to being customer-oriented organisation are another important requirement. According to Almotairi (2009), these factors consist of focusing on good coordination, and building

projects teams, front office and examining information flows between the front and back office, redesigning customer interaction points and orientation on customer process activities, managing possible cultural resistance, and also emphasising a culture that reflects the customer-oriented organisation. It is essential to design the structure of a bank properly and effectively in order to build a strong and long-term relationship with customers, who are the main assets for any bank.

According to Chaffey et al. (2008), in order to implement eCRM, four stages need to be taken into consideration. The first stage is attracting new and existing customers, which need a clear strategy in order to clarify how to acquire new customers and how to maintain existing ones by using different methods such as encouraging them to interact. The second stage has two parts; first, motivate customers to action by using sales, and lead generations offer, and second, capture information about customers in order to keep the relationship. The third stage is an approach to maintaining dialogue using online communication with customers by encouraging them with devices such as information about new product or services, loyalty schemes, and customer support. Finally, the last approach for eCRM implementation is maintaining dialogue using offline communication, such as direct mail. This shows the importance of strategy, customer data and communicational channels in order to achieve success in eCRM implementation. Therefore, these factors must be considered in the proposed framework for this research.

ECRM and CRM adoptions should start with an assessment (Payne & Frow, 2005) and not merely implementing without any assessment, which might cause eCRM failure. This objective can be achieved by securing top management commitment to eCRM and CRM implementation as a business strategy aligned with a bank's strategy in order to achieve the organisation's objectives (Almotairi, 2009). Therefore, developing an eCRM strategy is important for implementing an eCRM in banks as high failures are related to failing to have a clear strategy for a better understanding of the customers and increase their loyalty and satisfaction.

According to Kim et al. (2012), successful eCRM implementation in an organisation can bring customer satisfaction, customers trust, and enhance customer value which leads to customer commitment. So, it is evident that as banks understand the importance of eCRM implementation in their organisation, it is crucial for them to assess eCRM readiness by measuring CSFs related to eCRM and then start implementing eCRM. Otherwise, they will be faced with eCRM failure and will not achieve their organisations' objectives. Banks which are the focus of this study in terms of their eCRM readiness and maturity need to consider CSFs for eCRM assessment. This assessment shows whether a bank is really ready to implement

customer-centric strategies and activities or not. In addition, assessing eCRM readiness cannot guarantee the success of eCRM and banks need to assess the maturity of e CRM continuously after eCRM implementation in order to recognise the level of eCRM maturity which can provide a status of eCRM and help them to improve their processes by using different methods. All these identified factors can be used for creating an eCRM readiness/maturity framework and consequently for proposing an assessment tool as the main aim in this study.

2.11.1 The Case of the Iranian Banking Industry

Iran is a developing country with a population around 83 million. Today, lifting European sanctions and obstacles against Iran opens business opportunities. One of these opportunities is international banks entering Iran, which means more competition among Iranian and foreign banks. According to Iranian Foreign Minister, the central banks of seven European states are ready to work with Iran. Hence, to survive in this environment, Iranian banks need to focus on their customers more to avoid losing them, and this can be achieved by adopting eCRM.

The Central bank of Iran founded in 1960 as a banker for the government. It is responsible for issues notes, currencies, and supervises banks in Iran. According to CBI (2016), about 20% of the country's wealth was deposited with private banks and the remaining 80% with state banks. The Banker (2018), an English language monthly international financial affairs publication, owned by The Financial Times (FT), listed 10 Iranian banks by assets (Figure 2-3).

TOP IRANIAN BANKS BY ASSETS

Assets ranking	Bank	Assets $m	Assets % change
1	Bank Melli Iran	59,544	51
2	Bank Saderat Iran	43,038	32
3	Bank Mellat	32,502	26.4
4	Bank Sepah	26,378	11
5	Bank Tejarat	26,340	18.4
6	Bank Keshavarzi	16,675	2.3
7	Bank Maskan	13,075	na
8	Parsian Bank	12,648	44.4
9	EN Bank (Bank Eghtesad Novin)	10,351	na
10	Bank Pasagard	6346	na

Source: The Banker

Figure 2-3: Top Iranina banks by assets

The Banker (2018) also has published top Iranian banks by Return on Investments (ROA) and profits (Figure 2-4 and 2-5). According to CBI's Deputy for Supervisory Affairs (2018), more than 200,000 employees serve in more than 23,000 branches of banks and credit institutions. Therefore, in regard to the number of banks branches in Iran, it is necessary for Iranian banks to survive in this competitive environment.

TOP IRANIAN BANKS BY RETURN ON ASSETS (ROA)

ROA ranking	Bank	ROA	ROA prev
1	Bank Maskan	3.19	3.2
2	Bank Pasagard	2.95	3.9
3	Export Development Bank of Iran	2.87	3.48
4	EN Bank (Bank Eghtesad Novin)	2.07	na
5	Parsian Bank	1.83	na
6	Bank of Industry and Mine	1.36	2.23
7	Bank Tejarat	0.59	0.59
8	Bank Sepah	0.5	0.65
9	Bank Mellat	0.5	na
10	Bank Saderat Iran	0.42	0.7

Source: The Banker

Figure 2-4: Top Iranina banks by ROA

TOP IRANIAN BANKS BY PROFITS

Profits ranking	Bank	Pre-tax profits $m	Pre-tax profits % change
1	Bank Maskan	418	na
2	Parsian Bank	232	3.1
3	EN Bank (Bank Eghtesad Novin)	214	na
4	Bank Pasagard	187	94.9
5	Bank Saderat Iran	181	-20.7
6	Bank Mellat	162	22.2
7	Bank Tejarat	156	-43.2
8	Bank Sepah	132	-14.6
9	Export Development Bank of Iran	109	93.6
10	Bank of Industry and Mine	74	-12.4

Source: The Banker

Figure 2-5: Top Iranian banks by profits

In the past few years, due to various social and economic problems, customer-oriented and its

components have been neglected by Iranian banks, and they have failed to use the best of modern marketing. Iranian Banks and several other financial service providers must realise the importance of eCRM and its potential to help them to acquire new customers, retain existing ones, and maximise their lifetime value. As mentioned before, eCRM implementation in banks must be evaluated in order to achieve success and gain eCRM deployment benefits.

Due to the massive competition in current and future markets, banks in Iran need to build a long-term relationship with their customers and retain them. To achieve this goal banks, need to implement an eCRM solution but before any implementation, due to the huge amount of e CRM deployment failure, banks need to assess their eCRM readiness. This research is one of the priority studies in the banking industry and can help banks to assess their eCRM readiness and maturity. For this purpose, it is imperative to focus on factors such as strategies, plan, operation and services. In other words, successful implementation of these factors can guarantee the eCRM success in banks.

Reviewing the literature illustrates the existence of a research gap in assessing eCRM readiness and maturity in banks. Therefore, there is a need to fill this gap by conducting the current research. Also, as it is necessary to determine the factors affecting eCRM readiness and maturity for proposing an assessment tool, choosing a case study can help to narrow down a vast field of research into one easily researchable topic. A case study provides some indications and allows further elaboration and hypothesis creation on a subject. Therefore, the Iranian banking industry was selected for this study.

As mentioned earlier, after reviewing literature and secondary data about eCRM it is clear that there is the number of gaps, which need to be tackled. The following are examples of these gaps about current research issues, eCRM readiness and maturity in banks:

- There are no consistent approaches for assessing eCRM readiness in banks.
- There is no guideline list for banks to understand important factors in terms of eCRM deployment.
- There is no particular approach for assessing the maturity level of banks in terms of deployment of eCRM.
- There is no assessment tool for eCRM readiness and maturity.

2.12 Hypotheses

As mentioned, this research attempts to study the deployment of eCRM readiness and maturity models in the Iranian banking industry. The current research has three dimensions: corporate strategy, organisational culture, and technology. Each dimension in this research was identified from reviewing the existing literature, and each dimension consists of factors, which are related to them. With the help of these dimension and associated factors, the initial framework is suggested for eCRM readiness and maturity. This research endeavours to answer one question with two sub-questions as following.

Main research question:

- What are the factors that can be used to investigate the readiness of Iranian banks for eCRM adoption?

Sub-questions:

- How can eCRM readiness and maturity in banks be assessed?
- What would be an effective eCRM readiness/maturity assessment tool?

In order to answer the research questions, it is necessary to devise hypotheses from factors affecting eCRM readiness and then design questions for interview and questionnaire. For the creation of questions, it is necessary to link each question to the specific factor and support it with references. Then each question and the associated result can be used to prove whether the identified dimension is correct or not. Therefore, based on three dimensions there are three hypotheses as follows:

H1: There is an association between the corporate strategy and bank eCRM readiness.

H2: There is an association between the organisational culture and bank eCRM readiness.

H3: There is an association between the technology and bank's eCRM readiness.

In the next chapter (research methods), the developed scale will be discussed, which helps the researcher to evaluate the impact of the three identified dimensions on eCRM readiness in Iranian banks.

2.13 Summary

This chapter introduces the background of CRM and eCRM and their definitions and perspectives by other researchers. Evolution, components of CRM and eCRM, and their

benefits are discussed. ECRM readiness and maturity, alongside success factors and the number of existing frameworks and models for them, are reviewed. These eCRM frameworks, models, and CSFs can help the researcher in order to answer the current study questions. This chapter has presented a review of extant literature, which helps the researcher to provide a basis for developing a conceptual framework for this research.

As discussed before, the researcher identified some gaps in eCRM literature; for example, dealing with the absence of a conceptual model for eCRM readiness and maturity. Therefore, this chapter establishes a background for the context of eCRM readiness, CSFs, and maturity, which supports the researcher in proposing a conceptual framework.

This research aims to contribute to knowledge by understanding and defining the factors affecting eCRM readiness in Iranian banks and proposes a readiness and maturity assessment tool. According to Saunders et al. (2012), answering a specific problem in a particular organisation is developing new knowledge. This research wants to assess different stakeholders' perspectives and rank the factors affecting eCRM readiness by proposing an approach to assessing eCRM readiness. The main contribution of this research is to survey bank managers, decision makers, and employee's perspective, and discuss how these different perceptions affect eCRM readiness in Iranian banks.

The developing countries may face additional difficulties in the deployment of eCRM solutions due to a number of factors, ranging from the adoption of technology to the introduction of CRM strategies at an organisational context. Also, the banking sector needs more investigation regarding those factors that affect the deployment of eCRM, so it is vital to identify these factors and rank them in order to achieve success.

This research focuses on eCRM success factors in the banking industry with an emphasis on Iranian banks as a developing country. Considering the lack of consistent approaches in assessing eCRM readiness in Iran banking sectors, it is necessary to propose a readiness model for individual organisations. In a report entitled, Answers to five frequently asked questions about CRM projects (Forrester, 2009), Forrester Vice President and Principal Analyst, Bill Band, presents evidence that under 50% of CRM projects fully meet expectations.

Lack of top management support, over-emphasis on technology and systems, lack of customer-centric culture, lack of readiness process, lack of strategy and vision, and poor-quality data are some of the factors leading to CRM failure (Nguyen et al., 2007; Chalmeta, 2006) so it is essential to assess these factors before any implementation. Therefore, in order to tackle the

issues and attain a research objective, the researcher needs to choose an appropriate method to be followed which will be discussed in the next chapter.

Chapter 3

Research Methods

Chapter 3

3. Research Methods

3.1 Objectives of this chapter

- ➢ Discuss research epistemology
- ➢ Research approaches in this research
- ➢ Discuss the qualitative, quantitative, and mixed Methods approaches
- ➢ Discuss the research process
- ➢ Illustrate the research design
- ➢ The focus of this study
- ➢ A pilot study in this research
- ➢ Illustrate the methodology for this research
- ➢ Illustrate the conceptual framework
- ➢ Discuss the research data collection methods

Collis & Hussey (2013) state that it is vital to select an appropriate research methodology and briefly review how the work is carried out to reach the desired outcomes. This can be achieved by discussing the philosophical stances, strategies, and approaches, which place this research within a widely acceptable research context.

3.2 Research Methods for This Study

A mixed method approach is suitable for this research which is a combination of qualitative and quantitative approaches. Using qualitative and quantitative approaches helps the researcher to take advantage of triangulation. This research follows the explanatory sequential mixed methods, which allows the researcher to conduct quantitative analysis, collect data, analyse

them and then explain the result with the help of qualitative research in more details (Creswell, 2014).

The primary purpose of this research is to create an eCRM readiness and maturity assessment tool for Iranian banks by surveying managers and employees to identify main dimensions and factors. With the help of a quantitative approach, the researcher can investigate the perceptions of employees of banks to evaluate the eCRM readiness and determine the important factors. This strategy helps the researcher to use a quantitative survey methodology with self-administrated questionnaires in order to collect the data relative to underlying dimensions and factors, which have been identified from reviewing the literature.

As this research using mixed methods, the qualitative approach provides strengths to the quantitative data results and helps the researcher to understand the problem more deeply. There are four types of data collection for qualitative data: observations, interviews, documents, and audio-visual material. Other important stakeholders are bank managers and decision makers. Given that they do not have enough time for filling the questionnaires and also due to the advantages of a face-to-face interview and importantly flexibility of researcher to control over the line of questioning and raise new questions, an interview is selected for this study to collect useful information about eCRM readiness in Iranian banks.

The next step after data collection is data analysis, which is another important part of the research. Regarding qualitative research, after choosing the semi-structured interview as a data collection strategy, which is a set of pre-determined open questions, it is necessary to plan how the data will be recorded. Furthermore, data analysis and interpretation as the last process of qualitative research are important. The next step is to determine what qualitative data analysis program will be used for analysing data or whether hand coding is necessary.

All these steps, both qualitative and quantitative, must be applied to this research for the data analysis process. It means quantitative data is collected by designing the structured questionnaires for employees of banks in Iran and then the semi-structured interviews are conducted by bank managers, finally combining the results. Furthermore, data from questionnaires and interviews are analysed using SPSS and NVivo software respectively. In addition, based on the findings, eCRM readiness and maturity of a case study bank are assessed using tools, which will be proposed in a further section. More details will be discussed in the quantitative and qualitative chapters.

In the next section, the proposed framework is discussed. This framework consists of two

models. The first model is identified from the literature and shows the factors affecting eCRM readiness. After examining the literature review and identifying the factors affecting eCRM readiness, some factors showed higher acceptance. Therefore, these factors were decided on investigating eCRM readiness. Another model for maturity is based on Capability Maturity Model Integration (CMMI) perspective, which can be viewed as a set of structured levels that describe how well the behaviour and practices of an organisation can reliably and sustainably produce the required outcomes.

3.3 Proposed Conceptual Framework

The focus of this study is to determine the dimensions affecting eCRM readiness in Iranian banks and propose a readiness/maturity framework with tools to banks in order to facilitate their eCRM readiness and maturity. Four dimensions with associated factors identified from the literature for eCRM readiness are technology, strategy, culture, and employees' eCRM perceptions. Based on the literature, each of these dimensions has main factors which affect them and can be used for measuring each dimension. Some other factors were identified from the literature in terms of eCRM maturity which can be used for eCRM maturity assessment. Therefore, the proposed framework consists of the eCRM readiness model and eCRM maturity model, which are integrated in order to help the researcher to answer the research questions.

This research aims to improve on prior research by providing empirical validation of an eCRM readiness/maturity framework and tools. Because the previous investigations have not expressed the influence of identified dimension in eCRM readiness in Iranian banks and assessing the e CRM maturity in Iranian banks, the present study attempts to reduce this gap by investigating the relationship between these dimensions, and finally to propose eCRM readiness/maturity assessment tools.

This proposed framework describes the relationship between variables that contribute to the research problem and provides the foundation on which an entire study project is based. Ultimately, the proposed framework facilitates the generation of hypotheses which can be tested. In addition, all variables in the framework are considered relevant to the research problem and build up the proposed framework.

As the focus of this research is on eCRM readiness and maturity in Iranian banks, the framework should be proposed based on these criteria. The next pages discuss the building of a framework for eCRM readiness and maturity for banks, ultimately creating an assessment tool. As the proposed framework (Figure 3-1) has two parts for readiness and maturity, each part

separately is discussed in order to provide a better understanding of the models. In terms of eCRM readiness, reviewing the literature illustrated that dimensions affecting eCRM readiness are a corporate strategy, technology, and organisational culture.

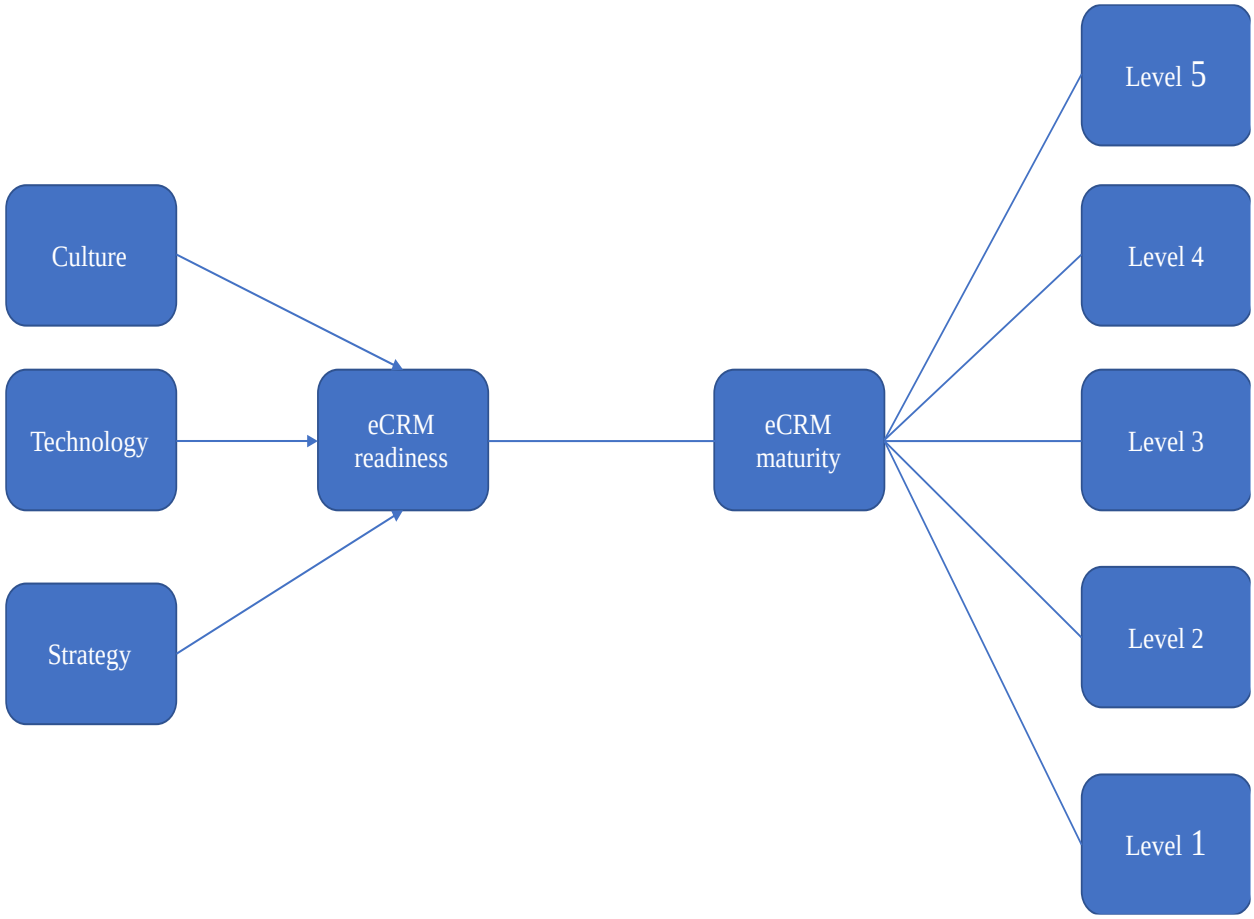


Figure 3-1: Integrated eCRM readiness and maturity framework

Therefore, based on the previous activities, 14 factors were proposed (Table 3-1). Satisfactory in this limited area can facilitate success in terms of competitive behaviour for any organization; therefore, these factors need more consideration. In order to formulate the metrics of each factor, this research follows the Goal Question Metric (GSM) paradigm (Basili et al., 2001). As can be seen in Figure 3-2, the fundamental stage of this strategy is to set questions for an identified goal that organisation would like to achieve and then test the achieving goal status by answering these questions, which including specific metrics that help the question be answered. This paradigm can help to achieve the goals; thus, this theory is based on goal-oriented measurements and each measurement collected is stated in terms of the major goals. Then, questions are derived from the goals which can help to determine whether the goals can

be achieved. Finally, the metrics or measurements that are collected can be used to answer the questions in a quantifiable manner. As one of the contributions of this study is to identify eCRM readiness dimensions in banks, the goal is the main research question. Each question is based on each dimension, which can be measured using different metrics. These metrics were inspired by an extensive literature review related to CRM/eCRM and CSFs. In addition, some of them were created by the researcher for the purpose of this study.

Table 3-1: Factors for eCRM readiness and maturity

Infrastructure	(Padmavathy et al., 2012) (Bahrami et al., 2012) (Ahmad et al., 2012)
Knowledge management	Sedigh & Alikhani, 2013) (Thakur, 2014) (Radfar & Malek, 2012)
Strategy	(Da Silva & Rahimi, 2007) (Pan & Baik, 2007) (Chen & Chen, 2004) (Eid, 2007)
Plan	(Darvish et al., 2012) (Rigby et al., 2016)
Number of channels	(Kaplan & Haenlein, 2010) (Nguyen & Mutum, 2012) (Liu et al., 2012)
Goals	(Kim et al., 2012) (Alhaiou, 2011)
IT policy	(Bahrami et al., 2012) (Azad et al., 2014)
Awareness	(Moreno & Melendez, 2011) (Azad et al., 2014) (Gartner, 2016)
Resistance	(Arab et al., 2010) (Kavitha, 2013)
Skills	(Mendoza, 2007) (Darvish et al., 2012)
Integration between channels	(Roschmann & Ziyadullaeva, 2011) (Ling & Qi, 2011) (Harrigan et al., 2008)
Human resources	(Nguyen & Mutum, 2012) (Gartner, 2016)
Training	(Basahel, 2012) (Ahmad et al., 2013) (Peppers & Rogers, 2010)
Top management commitment	Ling & Qi (2011) (King & Burgess, 2007) (Alshawi et al., 2010)

This approach helps to determine whether the goal is achieved or not based on the focus of this study, this approach helps to identify the dimensions with associated factors affecting eCRM readiness in Iranian banks. After identifying these factors, another purpose of this research is to evaluate eCRM readiness in banks based on identified factors. Therefore, Analytical hierarchy process (AHP) method was used for assessing the factors which will give an overall view of readiness of eCRM in a bank, based on the dimensions and factors.

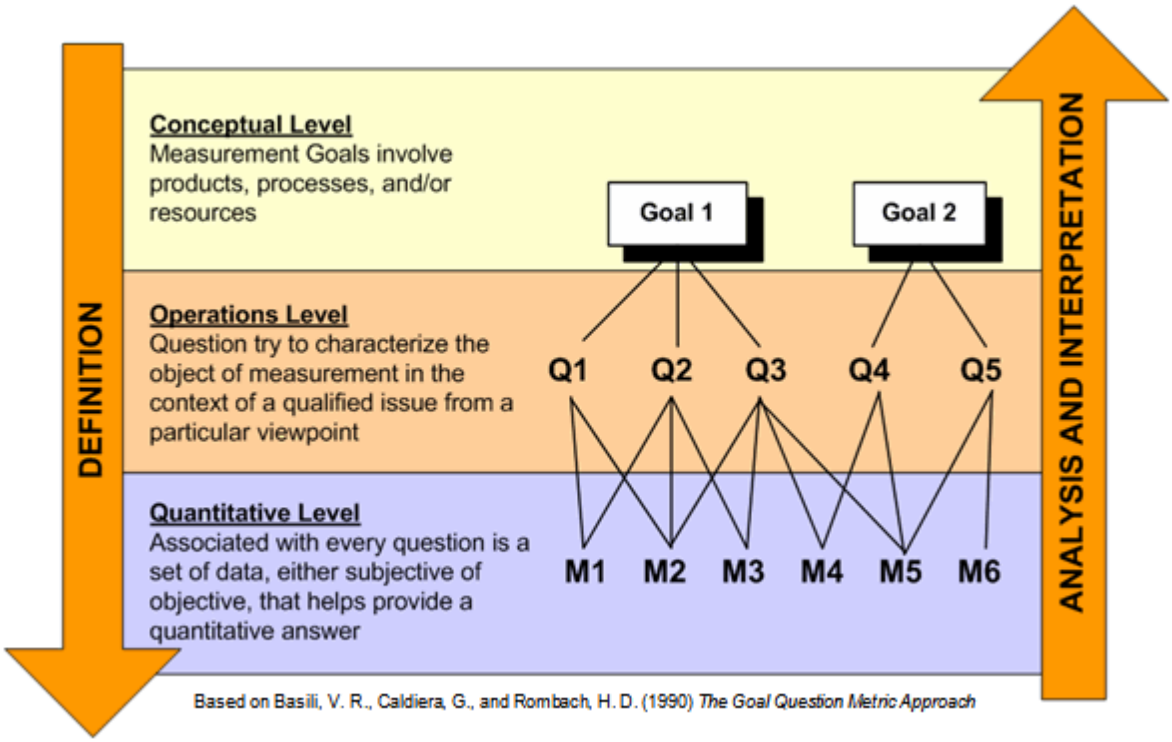


Figure 3-2: The Goal Question Metric

The evaluation procedure will be discussed further in Chapter 4, but the following steps were used to perform the evaluation:

1- After identifying the dimensions for eCRM readiness, an assessment tool was sent to the manager of a selected bank to evaluate the factors. Each metric was answered according to the scales defined. According to Mendoza et al. (2007), the evaluation scale can be 1 to 5, which shows the minimum and maximum of the existence of the factors. This tool was created by the researcher and has two parts that help to assess eCRM readiness based on a manager's evaluation upon dimensions and factors. In addition, the first part of the tool assesses dimensions, whilst the second part prioritises the factors using comparison matrices based on the importance of their attention in the bank.
2- The results from the created tool were taken from the bank for each dimension and factor to assess eCRM readiness.
3- The results were compared to the acceptable level of each dimension for an adequate eCRM readiness. This acceptable level was derived from CRM and eCRM expert perspectives by surveying them using the exact tool.

As assessing the eCRM maturity of the bank is another purpose of this study, the second part of the proposed framework is related to eCRM maturity. This part of framework discusses the

levels of eCRM maturity. These levels are important to assess the eCRM maturity in order to recognise the current and optimal position of eCRM, which can help achieve the success of eCRM. Review of the literature illustrated that one of the maturity models is suitable for this research. Because of that, the CRM3 model is selected which, compared to other models, is considered to have more eCRM success factors. As mentioned and discussed before (chapter 2), this model proposes stepwise implementation and measurement of CRM maturity, based on critical success factors (CSFs). This model has five levels from chaotic to optimising level, and each level considers different factors for assessing maturity. Therefore, this model is adapted by the researcher as a suitable maturity model which provides a method for judging the development status of processes within a bank. Furthermore, integrating the proposed eCRM maturity model with proposed eCRM readiness can offer a comprehensive eCRM readiness/maturity framework to organisations in general, and Iranian banks in particular, in order to assess their readiness maturity. In addition, for the evaluation of eCRM maturity, the maturity section is added to the previous tool for eCRM readiness that shapes the eCRM readiness/maturity assessment tool.

Reviewing the existing literature illustrates the necessity of a maturity model that considers important eCRM factors for assessing the maturity in banks. Therefore, the CRM3 model was adapted to help the researcher to develop an eCRM maturity model that can facilitate the eCRM maturity assessment.

The structure of this maturity model is based on CMMI and SPI maturity model perspectives, which are built upon three dimensions. According to SEI (2008), CMMI helps integrate traditionally separate organisational functions, set process improvement goals and priorities, give guidance for quality processes, and provide a point of reference for appraising current processes. According to Niazi et al. (2005), a software process improvement (SPI) implementation maturity model can be built on three dimensions as follows:

- Critical success factors (CSFs) dimension - which is about factors affecting SPI implementation
- Maturity stage dimension - which considers the maturity levels in their proposed maturity model
- Assessment dimension - which is about assessing the factor implementation

Based on the above dimensions, the proposed eCRM maturity model for banks, which are the focus of this study, is structured with three dimensions as follows:

- CSFs dimension: This dimension consists of a number of dimension and associated factors, which are affected by eCRM success factors and not only CRM factors. A successful implementation process of SPI and CRM should be viewed in terms of critical success factors rather than processes areas (PAs) (Niazi et al., 2005; Sohrabi et al., 2010). Also, the CSFs approach is important in the field of CRM and IT, as confirmed by many researchers (Mendoza et al., 2007; Eid, 2007). Therefore, the researcher believes that CSFs for eCRM also can be used for assessing the eCRM maturity and can be used in the proposed model.

  Experts were finalised identified eCRM maturity dimensions and factors. To finalise the factors, the frequency analysis technique was used. This technique helped the researcher to identify the most important factors for eCRM maturity. Finally, after extracting important factors, CSFs is linked to different maturity levels of the proposed model.
- Maturity stage dimension: This dimension discusses the proposed model levels. A maturity model provides a practical structure with which to assess and improve the e CRM implementation process, so the levels can be categorised through dimensions and corresponding factors that address certain maturity level for banks. The CRM3 model adapted CMMI model, which is a process level improvement training and appraisal program, developed at Carnegie Mellon University (CMU) by a group of experts, can be used as a framework for appraising the process maturity of the organisation. This CMMI model consists of five levels including 24 process areas which cover the organisation's processes. As discussed by Sohrabi et al. (2010), instead of processes in CMMI levels, CRM CSFs are embedded in each level for Considering CRM maturity.

  Assigning the CSFs to each proposed level was tested by the Chi-Square test in order to find a relationship between the levels and CSFs by surveying CRM experts. Based on the analysis, the dimensions and associated factors were assigned to different maturity levels.

  The same approach is used to assign the identified factors into levels but with the difference that the identified CSFs are for eCRM and are considered more important factors for banks. Therefore, the newly identified factors, along with some other factors from the CRM3 model, are grouped and based on a design questionnaire surveyed in order to assign them to an appropriate level.
- Assessment dimension: In this dimension, in order to assess how well the dimensions and corresponding factors have been implemented in practice, each CSFs is measured. In order to measure the eCRM maturity in Iranian banks, RADAR logic (EFQM, 2012)

is used which is a dynamic assessment framework and powerful management tool that provides a structured approach to questioning the performance of an organisation. Sohrabi et al. (2010) used this approach in order to assess each factor in their model by assigning the score between 0 to 100 to each one, based on four RADAR logic dimensions. In addition, as Sohrabi et al. (2010) did not mention their instrument questions, which could be adopted directly, a new instrument based on four RADAR logic dimensions for bank eCRM maturity is created and will be used. This proposed eCRM maturity model can be used in order to assess the existing capabilities of an organisation, and the output of this assessment will be a number of strengths and opportunities to improve the future performance of an organisation. In this research, identifying the strengths of banks not only helps them to repeat the process of doing good things, even addressing the issues recognises and finally gives the decision makers of banks options.

As mentioned, RADAR logic can help to assess the dimensions and associated factors in this study in order to identify the eCRM maturity level banks from the proposed e CRM maturity model. In order to successfully use this model, it is necessary to adapt it for this research. RADAR logic has four evaluation dimensions as following:

- Result: this dimension involves criteria of the breadth and consistency of positive results over time and across project areas
- Approach: this dimension involves criteria of the bank commitments and management support for the practice, as well the bank's ability to implement eCRM
- Deployment: this dimension involves criteria of the breadth and consistency of eCRM implementation practice across project areas
- Assessment: this dimension involves criteria of the consistent control of eCRM implementation and continuing improvement

According to EFQM (2012), at the highest-level Radar logic states that an organisation should:

- Determine the result it is aiming to achieve as part of its strategy.
- Plan and develop an integrated set of sound approaches to deliver the required results, both now and in the future.
- Deploy the approaches in a systematic way to ensure implementation.
- Assess and refine the deployed approaches based on monitoring and analysis of the results achieved and on-going learning activities.

In order to assess eCRM maturity, which is the aim of this research, the RADAR scoring matrix is used to determine the overall score. This shows how individual scores resulted for each criterion based on the different weighting factors, and the score achieved for each element is based on the evaluation of the eCRM performance against each sub-criterion, aligned to the relevant attributes, using a scale from 0% to 100%. The sum of each sub-criterion, which can be calculated by dividing by the number of sub-criteria, illustrates the score for the specific criterion. The Radar scoring matrix was designed for the EFQM model, which indicates the areas an organisation should focus on in order to improve performance and competitive positioning in line with this research aim. This scoring matrix was adopted, as shown in Table 3-2, to examine the eCRM maturity dimensions and assess the e CRM maturity in banks. In addition, the details of eCRM maturity model level will be discussed in Chapter 4.

Table 3-2: Scoring matrix

	Unable to demonstrate			Limited ability to demonstrate					Able to demonstrate					Fully able to demonstrate					Recognised as Global Role Model			
Scale	0%			25%					50%					75%					100%			
Overall score	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	80	100

Therefore, the proposed eCRM maturity model is based on five levels:

Level 0: this level is adopted directly from CRM3. This is a level where the eCRM implementation process is chaotic, and no or only a few processes are defined.

Level 1: the name of this level is adopted from CRM3 which the awareness level is. As can be seen from the definition of this level, it considers awareness factors which are important and consists of strategy and cultural factors. The result from analysing the experts' questionnaires illustrated that in this level just strategy could be considered. Therefore, strategy dimension and its associated factors were embedded in this level.

Level 2: this level in CRM3 is "managed level" and was adopted from level 2 of CMMI. CRM3 level 2 considers change management factors but, as seen in the result of the expert's questionnaire, cultural factors were assigned to level 2. Therefore, level 2 of the proposed e-CRM maturity model is managed level with consideration on cultural factors. In addition, the list of the factors used to measure this dimension illustrated that there is a lack of some essential factors for assessing the level, such as employee skills.

Level 3: this level is defined as the level where CRM implementation processes are documented, standardised, and integrated into a standard implementation process for the organisation (Sohrabi et al., 2010). This level consists of process and knowledge management factors as eCRM's main components.

Level 4: this level is analytics level, which refers to measurement and control. Based on quantitative models and tools, eCRM process and activities are controlled and managed in this level. Therefore, this level focuses on analytics and measurement factors.

Level 5: this level is the level of optimising. It means that in this level an organisation needs to establish a structure for continuous improvement of eCRM. Therefore, optimised factors are essential. This level consists of technology factors such as operational eCRM and social e CRM factors.

Finally, the following steps were carried out to evaluate eCRM maturity in banks, based on the proposed eCRM maturity model:

1- A tool created by the researcher was sent to bank managers to evaluate eCRM maturity. This tool consists of a questionnaire based on RADAR logic dimensions in terms of eCRM in banks. All factors in this tool were measured based on RADAR logic dimensions, and for each of these dimensions, a score of 0 to 100 is allocated.
2- The results from the managers were taken for each dimension and factor. If the average score for each factor or dimension is higher than 70, the level from the maturity model can be passed (Sohrabi et al., 2010). Based on the scoring matrix, the score of 70 means the dimension and its associated factors are fully able to demonstrate, in other words, this score is a satisfactory score. This illustrates the average rating of each dimension and factor in order to assign a specific level of maturity.
3- The maturity model helps to identify the maturity of each factor based on the result.
4- Finally, the level of bank eCRM maturity was determined.

3.4 Data Collection Method

The fundamental theoretical framework of this research was developed in the previous chapter, and in this chapter, the research design and methods that were undertaken are discussed. Based on the research onion diagram (Figure 3-3) introduced by Saunders et al. (2012), this research study falls under the category of ontological philosophy, and in particular the pragmatism stance. The reason for potentially adopting the pragmatism approach is due to the special

attention of this approach to the research problem, as can be applied by the mixture of methods which gives freedom to the researcher to move between methods. This is crucial for this study for surveying the main bank stakeholders' perceptions. The research work carried out follows a deductive approach as this research starts with questions and the researcher attempts to answer them. The main research question in this study is "What are the main factors that can be used to investigate the readiness of Iranian banks for eCRM adoption?" To answer this, findings can either reject or confirm the research question. The research study is based on a strategy that involves case studies, which in this research is five private and state banks, and a survey strategy that help the researcher to collect data from them in terms of their eCRM.

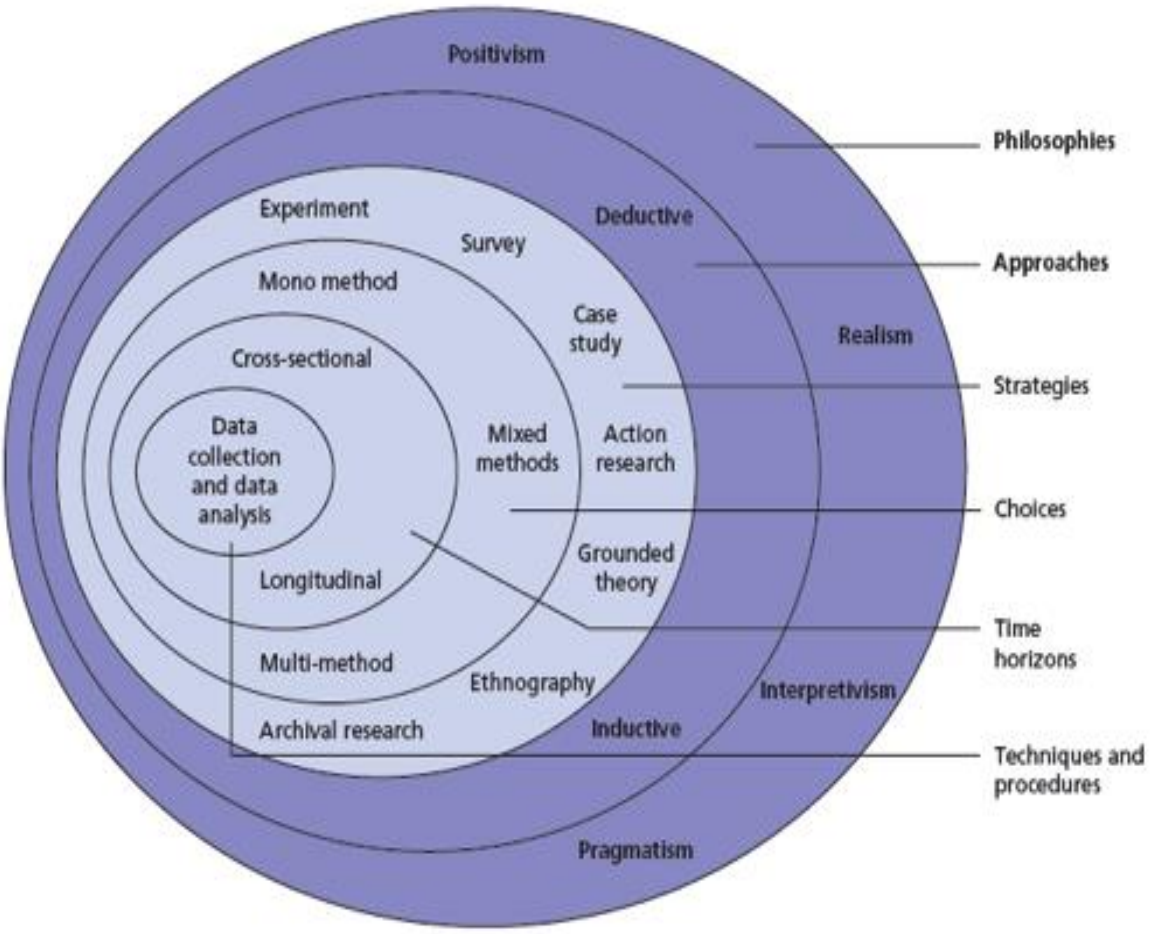


Figure 3-3: The research onion (Saunders et al., 2012)

As mentioned, this study uses mixed methods, which is a combination of qualitative and quantitative approaches. Mixed methods involve the integration of quantitative and qualitative research and data in a research study. In this particular study, using structured questionnaires and semi-structured interviews means different data collection methods and, accordingly, different data analysis. Using mixed methods strengthens the research and gives a better value for the research. According to Bryman (2015), the reasons for using mixed-method are as

follows:

- Triangulation: use of two or more data collection methods
- Facilitation: use of data collection method to aid research using another data collection method within a study
- Complementarity: use of two or more research strategies so that different aspects of an investigation can be dovetailed
- Generality: use of independent sources of data to contextualise the main study
- Aid interpretation: using qualitative data to help explain relationships between quantitative variables
- Study different aspects: quantitative to look at macro aspects and qualitative to look at micro aspects
- Solving a puzzle

Therefore, in this research, in order to determine the factors affecting eCRM readiness in Iranian banks, mixed-methods are used to answer the research questions. Using mixed- methods provides strengths that offset the weaknesses of both qualitative and quantitative research. Thus, as the purpose of this research is to survey main banks stakeholders' perceptions in terms of eCRM, it is better to use different data collection techniques. A face-to-face interview with managers and decision makers of banks provides accurate screening, can keep the interviewee focused and will help to obtain detailed information. A questionnaire technique helps to measure the variables and confirm the existence and importance of these factors in terms of eCRM. Hence, using questionnaires is a suitable approach for collecting and analysing eCRM perspectives of bank employees, and helps the researcher to use the findings to generalise to different banks, and finally to propose an assessment tool. In addition, large amounts of information can be collected from many people in a short period and in a cost-effective way, and the results can be easily and quickly quantified. Therefore, one structured questionnaire for employees and semi-structured interview for decision makers were selected for the data collection. This can help to interpret and, importantly, to answer the research questions, finally creating an assessment tool for eCRM readiness and maturity.

The proposed framework has two parts: eCRM readiness and maturity, and the proposed research framework was tested using a sample of bank managers, and employees at the selected case studies banks in Iran. But it is important to understand which managers and employees are needed for data collection. The data must be collected from these people. First, a senior

executive who knows why eCRM is important and he/she is equipped with strategies. This person is the one who demonstrates his/her commitment to the new project by incorporating eCRM into his/her daily communication with the employees. The second person is an IT person who can help to understand the technical side such as software and also can help to solve any installation and implementation problems that may arise. The third person is a front desk or customer service representatives who assist customers. And finally, a person who works in the marketing department of the bank and provides the necessary research to identify the target customers. Therefore, for this study, the data was collected from the bank's top managers and employees who work in marketing, IT, and customer service departments.

For each part of this research, there is a different method of data collection. First, the eCRM readiness data collection is discussed. As this research follows mixed methods, quantitative data collection for the eCRM readiness part was started by distributing five-point Likert scale structured questionnaires among bank employees in order to confirm or reject the identified eCRM readiness dimensions from the literature.

The characteristics of the population, as discussed in the data description section, are the banks' stakeholders (employees and managers). According to Creswell (2014), identifying the population and sampling are important parts of the research. Therefore, the population has to be identified and appropriate sampling types are selected. The population is the entire group of people related to the particular study which needs investigating and, as the purpose of the first part of the framework is to determine the dimensions affecting eCRM readiness in the Iranian banking industry, the research population is defined as the entire number of employees in the selected banks.

After identifying the population of the current study, understanding the sampling theory is important. A sample is a part of the target population and should be precisely selected to represent the total population (Sekaran & Bougie, 2013). According to Creswell (2014), there are six aspects of the population and sample to be described in a research plan, and all of them are essential. First is identifying the population in the research and stating the size of this population. Second, identifying whether the sample design for this population is single stage or multistage. Third, identifying the selection process for individuals, which can be a random size where each individual in the population has an equal probability of being selected. Fourth, determining whether the study will involve stratification of the population before choosing the sample. Fifth, discussing the procedures for selecting the sample from available lists. And finally, indicating the number of people in the sample and the procedures used to compute this

number.

Based on the above description, sampling involves taking a subset of subjects, and for this research, there is a sufficient number of bank employees to represents the entire population for the purpose of this study. There are two types of sampling: probability and non- probability sampling (Creswell, 2014). Non-probability sampling is not based on random selection; instead, it is based on human choices, such as volunteer or convenience samples. Unlike non-probability sampling, probability sampling focuses on the belief that the sample fairly represents the research population. In general, probability sampling is rigorous and more accurate because non-probability sampling does not involve random selection, i.e. it does not represent the population.

As non-probability sampling is not dependent upon rational probability theory and most researchers prefer probabilistic over non-probabilistic sampling due to the accuracy and rigorous nature, as this research is looking for a conclusion which affects the whole population of study, probability sampling was selected.

For this research, stratified random sampling was selected as one of the probability sampling types. Other techniques, such as systematic random sampling could be used. Here, a random sample is chosen from a population, and the process first involves the selection of a fixed starting point in the population and the use of a constant interval between samples to obtain subsequent observations. This method can be carried out if the complete list of the population is available, which is difficult due to the privacy policy in this research.

Another method of sampling is cluster sampling, which is ideal when it is impossible to compile a list of elements that make up the population (Creswell, 2014), such as across a wide geographic area which is not a case in this research. Another method of sampling is simple random sampling in which everyone in the target population has an equal chance of being selected, which provides the ability to generalise to a population (Creswell, 2014). Further methods are convenience sampling, which is based on availability and convenience and stratified sampling which needs the characteristics of the population. In this method, the population can be stratified based on the characteristics before any random sampling (Fowler, 2013).

As stated this research followed stratified sampling. The reason is that the target population is all the employees in five private and state case studies banks in Tehran, the capital city of Iran, which were selected based on their reputation. According to the stratified sampling method, it

is necessary for the characteristics of the population to be known; hence, the characteristics of the research target population were chosen as being private and state bank employees working in different banks. Therefore, as the research was interested in particular strata (groups) within the population, and also due to the equal probability of choosing each unit from each group, stratified sampling was suitable for this particular study.

After selecting the sampling method, determining the sample size of the study is important. According to Fowler (2013), sample size determination is related to the analysis plan in research and needs a specific table for finding the appropriate sample size. As collecting data from the whole population is costly and time-consuming, choosing sample size is suitable for representing the population. The sample size was selected form Sekaran and Bougie's (2013) sample size table. Therefore, based on Sekaran and Bougie (2013), the statistical table for the population of 19,705 employees employed in five private and state case studies banks gives 377as an appropriate sample size. Thus 377 questionnaires were distributed to five case studies banks.

Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

N is population size.
S is sample size.

Acknowledgments to Uma Sekaran

Figure 3-4: Sample size table (Sekaran, 2003)

In this research, stratified sampling, which provides a more accurate representation of the population based on characteristics, was used to divide the population into strata for bank employees. Based on the required 377 sample size it is necessary to know that how many questionnaires are required for each of the five selected banks for this study. To do that, the formula is:

Sample size of the strata = size of entire sample / population size * layer size

Therefore,

Bank employee's numbers for each bank were as following:

Parsian:	2285	2285/19705= 0.115	0.115*377= 43.7	44
Pasargad:	2137	2137/19705 = 0.108	0.108*377= 40.8	41
Melli:	7239	7239/19705= 0.367	0.367*377= 138.4	138
Tejarat:	6121	6121/19705= 0.310	0.310*377= 117.1	117
Sarmayeh:	1923	1923/19705= 0.097	0.097*377= 36.7	37
Total:	19705		Total:	377

In terms of sample size, customers were selected using a simple random sampling method. In this method, each individual in the population has an equal probability of being selected (Creswell, 2014). In the next section, the scale development will be discussed as a rigorous part of data collection to help the researcher.

3.5 Instrument Development

Developing a survey instrument helps to measure the constructs in the conceptual research model. The instrument name is eCRM readiness. All measures of this instrument were created based on literature review and understanding of the researcher from each factor, and some of them were adopted directly and adapted from relevant studies with valid and reliable measures of corresponding constructs in the research model to reflect the extent to which they represent the content of each construct. A total of 87 scale items were used to measure the constructs in this research model. Before discussing the summary of the source of these items, designing the questionnaire will be addressed.

The questionnaire consists of a set of the same questions in a predetermined order used to solve the specific problem and should be answered by each individual. The questionnaire is one of the most widely used data collection techniques within the survey strategy (Saunders et al.,

2012). Creating a questionnaire needs careful consideration, and a good questionnaire can provide a successful outcome for the purpose of the research. Therefore, collecting precise data is important for achieving the objectives of the study.

Designing a good questionnaire affects the response rate, reliability, and validity of data and these items can be maximised by careful design of each question, clear layout and an explanation of the purpose of the questionnaire, pilot testing, and wisely planned and executed administration (Saunders et al., 2012). The questionnaire method, as a primary data collection method, was used for this research because questionnaires tend to be used for explanatory and descriptive analysis. As the chosen questionnaire was used to establish attitude and opinion of organisational and organisational practices (descriptive) and it helps to explain and examine relationships between variables (explanatory), the use of a questionnaire is appropriate.

For this research, a self-administrated questionnaire was used which can be easily completed by respondents. A variety of factors impact the choice of the right type of questionnaire and these factors relate to research questions and objectives. These factors can be characteristics of the respondents, availability, ease of getting respondents, sample size, type of the questions, contamination or distortion, available time, financial implications and a number of questions. Therefore, there are different types of questionnaires for each research based on these factors.

Precisely defining the questions before data collection is essential. In other words, the researcher needs to know what data are necessary to collect and how to analyse them. According to Saunders et al. (2012), reviewing the literature carefully and discussing the ideas with tutors or colleagues are crucial. Also, there is a need to know the relationships of variables, such as dependent or independent variables. As the purpose of this research is to determine the main dimensions affecting eCRM readiness in Iranian banks, the relationship between eCRM readiness as a dependent variable and identified dimensions as dependent variables was tested through statistical analysis of data collected from questionnaires.

After designing the questionnaire, assessing the validity and reliability is another important part of the data collection procedure. Validity refers to the ability of a questionnaire to measure what the researcher intends to measure (Saunders et al., 2012). There are three types of validity assessment: content validity, criterion-related validity, and construct validity. In order to confirm what is included in the research questionnaire which presents the reality of the purpose of this research, content and construct validity were used. Content validity provides adequate

coverage of the investigative questions in this research by reviewing the literature and prior discussion by eCRM experts. A pilot study was utilised to test the construct validity, which helped to test the feasibility of a full-scale test.

A questionnaire is valid if it is reliable. Reliability is consistency of scale, meaning that all questions must be interpreted consistently in one way by the respondents, and it refers to the robustness of the questionnaire and whether it produces consistent findings under different conditions or at different times (Saunders et al., 2012, Creswell, 2014). One of the approaches for testing the reliability is the internal consistency test, which can be calculated using Cronbach's alpha. This approach was used in this research and will be discussed in Chapter 5.

The questions in the questionnaire were developed by reviewing the literature. Designing a question for a questionnaire means designing a measure, not a conversational inquiry (Fowler, 2013). As the purpose of this research is to determine the main dimensions affecting eCRM readiness in banks, the questions were created to measure dimensions based on GQM theory. The questionnaire uses a five-point Likert scale, in which the employees were asked whether they strongly agree or disagree with a statement. This type of questionnaire is better than an open-ended questionnaire in which respondents can freely answer the questions in their way. This helps the researcher to recognise the agreement of respondents on a statement, which can be categorised as strongly agree, agree, neither agree or disagree, disagree, and strongly disagree. In addition, as the research was conducted in Iran, the questionnaire was translated into the Persian language, and the researcher attempted to translate the source questionnaire to the target questionnaire precisely in order to ensure the same meaning. Furthermore, the layout the questionnaires were based on attractiveness to encourage the respondents and had a flow of questions with closing statements thanking them for completing it. According to Saunders et al. (2012), a self-administrated questionnaire should be between four and eight A4 pages long.

3.6 Scale Items

3.6.1 Dimension: Technology

ECRM adoption can improve customer service, sustain competitive advantage, reduce cost, attract new customers, increase profits, and maintain existing customers in banks but unfortunately a lot of factors prevent successful eCRM implementation and cause failure. Therefore, it is crucial to investigate important dimensions for eCRM readiness in banks.

Information technologies have become an essential part of bank capability and a source of sustainable competitive advantage. It is evident that IT resources contribute to performance and the future growth of banks. This provides the reason for many banks had changed their service delivery systems to customers, for example using IT-based channels.

Technology is identified as an important dimension for eCRM success based on the literature review in the number of studies such as (Darvish et al., (2012); Eid, (2007); Alshawi et al., (2011); Da Silva & Rahini, (2007)). IT as a subset of information and technology communication (ICT) helps banks to store, study, retrieve, transmit and manipulate customers' data. IT is positively related to bank performance, and better investment leads to better IT capabilities, which involve abilities of banks to mobilise and deploy IT-based resources in combination with other capabilities and resources, in turn leading to competitive advantage.

IT innovation has brought benefits to banks and can enhance communication effectively. IT capability is the ability of banks to absorb, process, and present the information that they hold. Technology helps to build a long-term relationship, develop loyalty and customers retention, which represent the essence of good eCRM. Technology provides banks with systems that can help them to track customer interactions and allow bank employees to retrieve all customers' information quickly. Banks need the right mix of innovative information technology, effective business processes, better data management and new workforce initiatives To achieve competitive advantage goal (Nguyen et al., 2007).

IT is a necessary and vital factor in eCRM and, through effective utilising of IT, customer knowledge is achieved. IT as an enabler that allows banks to foster closer relationships with customers, analyse their data and provide coherent customer views. Therefore, due to the intrinsic nature of banks that use information, IT capability can be considered as an important factor for the success of eCRM in banks. According to Bahrami et al. (2012), eCRM implementation can be viewed as the integration of strategic customer data utilisation into a loyalty scheme through the use of IT, and utilising it properly helps to improve customer management and stronger relationship (Bahrami et al., (2012); Harrigan et al., (2011); Eid, (2007); Gartner (2001); Azad et al., (2014); Ahmad et al., (2012)). Therefore, eCRM implementation requires sophisticated IT support.

IT infrastructure, which includes physical IT assets in terms of software, hardware and networks, is an important factor for eCRM and any lack of IT resources is an issue (Nguyen & Waring, 2013). The rate of ICT adoption in banks has increased and has been realised as a necessity in infrastructure improvements. Technology infrastructure also refers to the

integration of existing systems in different departments (Chen & Chen, 2004). Hence, eCRM integration with other systems is an important factor (Eid, 2007) that, depending on the business model, brings valuable customer information.

The development of IT systems is an eCRM success factor that focuses on the availability and management of technological resources including data warehouses, Internet facilities, and software selection and configuration (Almotairi, 2009). Having experienced and qualified IT personnel is an important factor for eCRM success (Almotairi, 2009), and banks need to consider human resources development. The number of channels is another important factor for eCRM success (Nguyen & Mutum, 2012) as this helps banks to reach their customers through different communicational channels, such as emails or social media.

Technological readiness consists of factors such as the skilled team, knowledge management, and infrastructure (Ocker & Mudambi, 2003). In order to investigate eCRM readiness in banks it is crucial to assess this dimension. Reviewing literature has proved the impact of the technology dimension on eCRM success and readiness (Sundar et al., (2012); Bahrami et al., (2012); Kennedy (2006); Arab et al., (2010); Padmavathy et al., (2012); Sin et al., (2005); Nguyen & Mutum (2012); Yazdanpanah & Gazor (2012); Roh et al., (2005); Almotairi (2009); El Essawi & El Aziz (2012); Chen & Popovich (2003); Alhaiou (2011). However, testing this dimension to check the existence in Iranian banks can help the researcher to confirm or reject this dimension based on different cultural contexts and also helps to introduce this dimension for proposing an eCRM readiness assessment tool.

Therefore, based on the previous discussion, the theoretical model of eCRM readiness is developed. The first dimension of this model is the technology dimension, which comprises infrastructure, number of channels, integration between channels, knowledge management technologies, and human resources factors. Twenty questions (subsection 3.7.4). were used in the scale to measure the technology dimension impact on eCRM readiness in Iranian banks to identify the main e CRM readiness dimensions.

3.6.2 Dimension: Corporate Strategy

Corporate strategy is another important dimension for assessing eCRM readiness (El Essawi & El Aziz, 2012). One of the important reasons for the success of eCRM is a clear vision of managers in terms of customer-centric strategy. As more than 70% of CRM initiatives fail and 90% of businesses cannot show their positive return on eCRM (VB Insight, 2015), the reason

is often the lack of a proper plan. Therefore, this dimension needs more consideration. Hence, in order to get more from eCRM, banks need to set a clear aim and objectives.

ECRM strategy focuses on its clear alignment to the organisation's general strategy (Almotairi, 2009). Hence, banks need to develop a strategy as a means to achieve transformation from being product-oriented to becoming a customer-centric organisation, meaning that banks need to place customers at the forefront. According to Forrester (2016), 18% of reported issues directly relate to inadequate strategies. Thus, eCRM implementation with a clear strategy can establish and maintain a good position and be competitive, but without strategy it means failure.

Successful businesses display inspirational leadership, building a market position against competitors with defined value propositions based on requirement, personified by the brand, and communication (Gartner, 2001). This is a vision that can be translated into action across all functional areas and executable at the local level. According to Gartner (2001), a successful organisation should understand how the customer base can be turned into an asset through the delivery of a customer value proposition. It should provide objectives, segments, and customers, and it should define how resources will be used in interactions.

Effective eCRM strategy has a critical role to play in the eCRM implementation (Eid, 2007) but only if the appropriate training is provided (Eid, 2007). Banks require to set a destination in order to develop a winning e-CRM strategy. ECRM helps banks to achieve their goals, and these goals must be identified at the first step. This can be helped to know what they are trying to accomplish. The next step for banks is to determine how they plan to achieve their objectives. They need to break their goals down into achievable objectives and identify when and how they plan to complete these steps. Therefore, as customers are important assets, banks need to set a definition of what makes a customer valuable, for example by prioritising them.

Correct planning is crucial in eCRM implementation (Arab et al., 2010; Eid, 2007; Bose, 2002) but employees determine whether the goals are met. A successful eCRM implementation is one that meets the business objectives (Eid, 2007), and these can be customer satisfaction, customer acquisition, customer loyalty, or customer retention. In order to achieve these objectives, banks need to become a customer-centric organisation, putting customers first and always at the core of the business.

ECRM is not just about purchasing software and waiting for transformation. ECRM is about proper planning, starting with clear and achievable goals, as well as knowing what the business wants, what is the vision, and understanding the customers and then allocating and setting

responsibilities. ECRM strategy must be aligned with the bank's mission, purpose, and strategy but if developing successful eCRM strategies and objectives were easy or routine, the failure rate would not be so deplorably high (Gartner, 2016).

An eCRM strategy outlines where the destination is, summarises the current situation and shows how the bank will get from where it is now to where it wants to be, gaining what benefits and at what costs (Gartner, 2001). The literature review illustrates that strategy can be considered as an important dimension for eCRM readiness (Chen and Popovich (2003); Greenberg (2009); Sohrabi et al., (2010); El Essawi & El Aziz (2012); Eid (2007); King & Burgess (2007); Puschmann and Alt (2004); Wilson et al., (2002); Da Silva and Rahimi (2007); Mendoza et al., (2006); Goodhue et al., (2002); Croteau and Li (2003); Chen & Chen (2004); Drucker (2000); Arab et al., (2010); Gartner (2001); Reynolds (2002); Azad et al., (2014); Ocker & Mudambi (2002); Almotairi (2009); Eid (2007); Chalmeta (2005); Padmavathy et al., (2012); Rigby et al., (2002)). ECRM is a business strategy, in which the outcomes optimise profitability, revenue and customer satisfaction, and therefore goals should be built around it. In order to create an eCRM vision developing a specific e CRM definition for banks is important. They can define who is and is not a customer, so these definitions help banks to accelerate the process of defining eCRM vision and provide a collective understanding between multiple departments for the first time (Gartner, 2016). After setting a unique definition, the eCRM vision can set out who the customers are and why e CRM needs to take place, and the strategy can then determine how it will happen.

To summarise, good visions are inspiring, helping banks to prepare for the future, clarifying top management views about long-term direction, reducing risk-taking, motivating employees, and representing integrity. The eCRM vision describes what the bank would like to become and eCRM objectives are the results of the planned activity, stating what is to be accomplished by when, which should be quantified. Finally, eCRM goals are specific targets that a bank intends to reach in the long term. Therefore, an appropriate corporate strategic plan should drive the business unit plans, and IT plans (Ocker & Mudambi, 2002).

Therefore, a bank's eCRM strategy dimension must be considered important for the proposed eCRM readiness model for this study. This dimension comprises strategy, plan, goals, and IT policy factors in the proposed eCRM readiness model. This dimension involves measures using 23 questions (subsection 3.7.4) in order to evaluate it and to check if it and its associated factors have an impact on eCRM readiness in reality.

3.6.3 Dimension: Organisational Culture

ECRM adoption is intrinsically linked to the individuals within the organisation and its nature (Nguyen & Waring, 2013). People within the organisation are important elements, and any change or acceptance of new technologies will have direct influences on the nature of any organisation, with lack of IT skills being one of the factors for eCRM implementation failure. Employee knowledge contributes to the success of eCRM, and bank employees need a range of technical skills and knowledge about eCRM. Therefore, employees as an asset of any organisation have an impact on the performance of an organisation and contribute to the success of a firm.

As mentioned, both employees and customers are considered as an asset. Banks must be customer-centric to achieve eCRM implementation benefits but before being customer-oriented banks must be employee-centric. Organisational culture refers to contributions that customer-focused and cross-functional teams can make to the creation of the broader customer-related knowledge upon which eCRM success is based. Organisational culture is another dimension which impacts on eCRM success, and there is an association between this dimension and eCRM outcomes (Coltman, 2007). Therefore, employees support, participation and awareness are crucial in terms of successful eCRM implementation.

Employees have a significant impact on eCRM success, and bank managers need to involve them in every step of the strategic process. Top management commitment is an important factor (Almotairi, 2009) that focuses on the willingness of top management to provide sufficient and necessary resources for the eCRM implementation process. Acceptance of new technologies by employees is considered to be another cultural factor for eCRM success.

For a successful eCRM, banks require skilled, competent, well-trained, and highly motivated staff. However, this requires staff awareness programmes, top management teams' support, and training sessions (Eid, 2007).

Employment IT skills have a positive impact on the readiness of eCRM (Sedigh & Alikhani, 2013) and, in general, IT and knowledge influence improving skills of employees, which leads to better performance of organisations. Training is crucial for the better performance of eCRM in organisations, and proper training helps the integration of eCRM into a daily basis. Culture in organisations refers to skilled employees, and successful eCRM relies on these staff. Therefore, if a bank accepts learning cultures, recognises the strength of culture, and embraces new activities, it can gain an advantage over their competitors.

Based on the review of literature, it can be concluded that organisational culture is another important dimension for eCRM success (Coltman (2007); Eid (2007); King & Burgess (2007); Chen & Chen (2004); Chalmeta (2005); Wilson et al., (2002); Basahel & Alshawi (2014); Boulding et al., (2005); Payne & Frow (2005); Arab et al., (2010); Darvish et al., (2012); Azad et al., (2014); Ocker & Mudambi (2002); Almotairi (2009). Banks without trained staff and decision makers' support cannot achieve success. Lack of employees' awareness and resistance can lead eCRM adoption to failure. Employees should be aware of strategies and policies in the bank and attend training courses regularly. They need to be committed to their bank and believe that they are effective in terms of the banks' performance. In addition, bank managers should support their team and take their perceptions into consideration in their decision making.

As can be seen from literature, organisational culture is an important dimension for eCRM readiness. Therefore, it is worth testing this dimension in reality. In order to evaluate the effect of organisational culture dimension on eCRM readiness, in reality, 17 questions (subsection 3.7.4) based on identified factors are created. The organisational culture dimension consists of awareness, resistance, skills, training, and top management support factors in the proposed eCRM readiness model.

Therefore, the described three dimensions are identified as the main eCRM readiness dimensions and will be tested in the banks. In the next section, eCRM maturity dimensions and factors will be discussed.

3.6.4 Questions

Based on the identified dimensions and factors for eCRM readiness an instrument was created. As discussed in section 3.4, in order to formulate the metrics of each factor the GSM approach was applied. All questions were driven by understanding the literature and identified factors. Therefore, the questions for assessing eCRM readiness in banks are as following:

Corporate strategy

Goals

Q1. Using eCRM affects the quality of banking operation
Q2. The bank shares customer information across all points of contact
Q3. All employees in my bank understand the share the common goal of building and maintaining customer relationships
Q4. The bank has established clear business goals related to customer acquisition, deployment, retention, and reactivation

Q5. The bank fully comprehends the needs of our key customers via knowledge learning
Q6. Organisations placed set of goals in its IT strategy

Strategy

Q7. The bank has clear objectives and strategies for updating the system used
Q8. The bank treats each key customer differently
Q9. Our top management supports the use of customer relationship management
Q10.Our top management team spends much time with their employees to discuss offering new products to satisfy customers
Q11. The organisation used IT to support employees and organisational learning
Q12. The bank has an IT strategy
Q13. The employees are aware of the bank IT strategy
Q14. All employees implement the bank IT strategy

Overall plan

Q15. The organisation IT action plan takes into consideration the assessment of the current organisation system in terms of IT resources (people, technology, applications)
Q16. The bank uses the website to market products
Q17. The policy of the bank has the required software to serve our customers
Q18. The policy of the bank has the necessary hardware to serve our customers
Q19. The bank information systems are desired to give comprehensive data about all aspects of our customers so that we can be responsive them
Q20. Our organisations IT strategy includes an action plan

IT policy

Q21. Individual customer information is available at every point of contact
Q22. The bank provides channels to enable ongoing, two-way communication between its key customers and its employees
Q23. The bank information system is designed to ensure customer data, so we can be responsive to them

Infrastructure

Q24. Everyone in your bank has access to the same customer information
Q25. Our employee training program is designed to develop the skills required for acquiring and deepening customer relationships and the use of IT
Q26. Our organisational structure is desired around our customers
Q27. IT enables customers to expect prompt services from employees
Q28. The transactions performed through the website is safely
Q29. The bank customises customer interactions using IT to optimise value and loyalty

Number of channels

Q30. customers can access their account, order and service information via email request
Q31. customers can access their account, order and service information via fax
Q32. customers can access their account, order and service information via Internet/wireless devices
Q33. The bank uses the Internet in its daily transactions
Q34. When the bank finds that customers would like to modify a product/service, the departments involved makes a coordinated effort to do so

Integration between communication channels

Q35. using eCRM gives me greater control over my work
Q36. technology is used to integrate various customer delivery channels
Q37. Bank has a set of tools to provide them with complete visibility on the customer's behaviour

Knowledge management

Q38. My bank fully understands the needs of key customers via knowledge learning
Q39. My bank exchanges information with our key customers frequently
Q40. The bank administers a customer loyalty program

Human resources

Q41. The bank has the capable technical personnel to provide technical support for the utilisation of computer technology
Q42. the bank has the capable technical personnel to provide technical support for the utilisation of computer technology in building customer relations
Q43. The bank has the required sales and marketing expertise and resources to succeed eCRM implementation

Employee skills

Q44. I have good knowledge about e-CRM
Q45. I have excellent communicational skills with customer
Q46. I trained, and I know how to deal with new technologies

Employee resistance to change

Q47. I am flexible with using new IT technology in my work
Q48. I am willing to take extra courses to learn new technology

Awareness

Q49. Our management understands the importance of IT in serving customers
Q50. I am fully aware of the benefits added to my work because of the new technology
Q51. Using eCRM system helps me to do my job quickly

Top management support

Q52. The bank manages all customer communications so that they are consistently superior and relevant to the customers
Q53. Policies and procedures critical to managing customer relationship are well documented and consistent across all customer touch points
Q54. Our top management has committed to provide adequate resources to ensure success
Q55. Our top management team provides leadership for the building and maintaining customer relationships as a major goal of my bank
Q56. Our top management spends much time with their staff to discuss offering new products to satisfy customers
Q57. The bank CEO specifies a budget for updating the system used

Training

Q58. I was involved in the evaluation of training courses that I had
Q59. The training courses I had, always had a positive impact on accomplishing my work
Q60. Training courses are so useful for my daily basis tasks

Readiness

Q61. It is easy for me to communicate with other departments in the bank
Q62. Job descriptions have been created, and positions filled
Q63. The bank commits time and resources to manage customer relationships
Q64. The bank maintains a complete customer database
Q65. The bank has a mechanism to encode new knowledge about customers into formal rules or policies that can be shared between banks participants and subunits
Q66. Customers are strongly focused on by all bank departments
Q67. Each department has documented clear goals and deliverables for eCRM
Q68. We have well-defined strategy, training, support, and required technology in our bank
Q69. Our bank has good e-CRM in placed
Q70. Our bank is entirely aware of the benefits of e-CRM deployment

3.7 eCRM Maturity Dimensions and Its Factors

Organisations, including those in the banking industry, are searching for guidelines and methodologies for judging their degree of eCRM maturity and competitiveness. According to Gamm et al. (2005), competitive pressures, changing market environments and increased customer demands are driving top management to find an appropriate answer to the following questions:

- ➢ What eCRM quality needs to be provided to fulfil the increased customer demands?
- ➢ In addition to existing eCRM programs, which other specific eCRM topics need to be implemented? Does the evolutionary path exist?
- ➢ Where we are now - what is our current level of eCRM maturity?

Using maturity models is a method for judging the development status of processes within an organisation and for identifying key practices required to increase the maturity of these processes. It comprises several degrees of maturity that an organisation can reach, usually over the course of years in a step-by-step evolutionary process. The development of the proposed eCRM maturity model in this research was affected by the existence of theoretical models, which are already established and considered different models for assessing maturity in general, and eCRM maturity in particular.

In this research, the proposed eCRM maturity model includes dimensions, its associated factors, and the statement for each factor based on RADAR logic. The proposed eCRM maturity model is composed of five levels that reflect the different maturity stages of eCRM to

provide guidelines to banks for judging their current eCRM status in each of the important areas for success.

The proposed eCRM maturity model includes factors, which affect eCRM success. The identified factors for eCRM readiness can be also used for eCRM maturity. However, corporate strategy, technology, and organisational culture are important dimensions for eCRM readiness, but the researcher believes that other dimensions can also be involved in the eCRM success and effect on eCRM maturity. As mentioned before due to the eCRM newness in Iran the importance of other factors was confirmed using another study at Middlesex University London. The results from this study helped the researcher to add some other important factors which cannot be derived from Iranian banks but are necessary to assess eCRM maturity. Therefore, eCRM analytics and measurement dimensions are added to the identified list of dimensions for eCRM maturity. The details were described in chapter 4. In addition, the RADAR logic questions to assess maturity were discussed in chapter 4.

3.8 Pilot Study

Before distributing the questionnaires and conducting the main survey for collecting data, it is necessary to undertake a pilot test (Saunders et al., 2012). A pilot study establishes the validity (Creswell, 2014) and is conducted on a small scale of study in order to achieve feasibility evaluation. A pilot study helps the researcher to refine the questionnaire, improve questions, eliminate ambiguous questions, test wording, analysis data, estimate completion time, and gain familiarity with the respondents.

For this research, a group of CRMs and eCRM experts were asked to comment on the suitability of statements, using their suggestions to help to restructure the questionnaires before pilot testing with bank employees. The appropriate number for a pilot is between 100 to 200 responses (Dillman, 2015).

For this study, a pilot study was conducted in five case studies banks in Tehran. One hundred questionnaires were distributed using delivery and collection questionnaires technique among bank employees. This approach is appropriate for administrating the questionnaire in this research as it enables the researcher to hand the questionnaire to managers who were responsible for the delivery of the questionnaires. Therefore, all questionnaires were printed, and interesting comments and suggestions were returned from respondents in terms of wording which helped the researcher to improve the questionnaire for the main survey. These comments gave a clear view of employees from questions to the researcher before applying to the whole

appropriate sample size for the research. In addition, the completion times for both employee's questionnaire were around 20 to 40 minutes.

3.9 Ethics

Attentive to ethical manner is important for the way the research is carried out to avoid risks to interviewers, participants, and respondents (Fowler, 2013). The researcher should make sure that there no harm arises for any individual as a result of the survey. Hence, ethical approval is required for all research undertaken that involves participants (i.e. human subjects). If the researcher collects data from a person to use within their research, the researcher must obtain ethical approval before commencing their study and collecting any data or recruiting participants. Therefore, in order to result in benefit and minimise the risk of harm, ethical approval must be obtained.

According to Fowler (2013), a respondent should be aware of the following information:

- Name of the interviewer or a person carrying the survey
- Who is supporting the research
- Accurate purpose of the research
- An accurate statement of confidentiality of answers
- Assurance of no negative consequences due to the cooperation
- Cooperation is voluntary
- Assurance of respondents can skip the questionnaire or questions

According to Fowler (2013), a signed consent form is not necessary but in some exceptional cases may be compulsory, especially when:

- Dealing with sensitive information which may harm or embarrass someone
- The population has a lack of judgment or power to decline participation
- There are important limits to the confidentiality of the data
- Access to information previously collected for a non-research purpose

The focus of this study is on surveying the main bank stakeholders who are bank managers, and employees, for identifying the main factors affecting eCRM readiness in the Iranian banking industry and also assessing the maturity level of eCRM in the bank. Therefore, as the participants in this study are human, bank managers, and employees, in order to collect the data, it is necessary to apply for ethical approval.

In the case of the evaluation of risk level of this research the level in this study is not a 'higher risk' ethics and is considered as minimal risk based on the listed types of research activity. This research was conducted in the five case study banks in Tehran, and the participants are managers, and employees of the selected banks. This research does not need any permission from an external organisation and does not involve data analysis using a government archive. Thus, there is no need for approval or license to access the data. In addition, this research does not fit into any of the security-sensitive categories.

This study is based on questionnaires and interview, and data sources are existing data and documents and non-vulnerable human participants. The decision makers and employees were recruited using an appointment so that they could choose not to participate in the project.

The questionnaires for employees were contained in a covering letter explaining the purpose of the study and they were informed that the survey is voluntary and there is no adverse result should they choose not to take part. Their responses will not be shared given the nature of questionnaires, which are anonymous due to privacy protection. Therefore, respondents were assured of any protection issues. In addition, managers of banks also informed employees about ethical consideration, such as freedom to withdraw at any time.

Finally, this research was not intended to collect personal data and the researcher obtained written informed consent to participate in a study collecting information in relation to eCRM readiness and maturity directly from research participants. Prior to interviewing the decision makers, initial letters were given to managers in order to explain what will happen.

3.10 Coding and Testing

The quantitative data obtained from the questionnaire are in raw form. This data needs to be processed and analysed to be useful. Therefore, quantitative analysis techniques help to turn this data into information, such as statistics, graphs or charts, which allows describing, present, and explain relationship within the data (Saunders et al., 2012). These techniques range from creating a simple table to comparisons using statistics through establishing statistical relationships. These data can be analysed either by hand or by computers.

One of the easiest ways to analyse data is by using Excel or advanced statistical analysis software packages, such as SPSS or Minitab (Saunders et al., 2012). However, before starting any analysis, it is important to prepare, input and check the data. According to Saunders et al. (2012), in order to undertake a quantitative analysis, the following considerations are necessary:

- Type of data
- A format in which the data will be input
- Data Coding
- Weight cases
- Check for errors

As the questionnaire in this research was based on scaled questions, where respondents were asked to rate how strongly they agree or disagree with a statement, the collected data is ordinal (Saunders et al., 2012). There are some who argue about this statement and that classifying the measurement scale for data is ambiguous. If data have similar size gaps between values, they can be analysed as if they are interval data (Blumberg et al., 2008). In other words, there are interval or difference between any two of value for one variable.

According to Saunders et al. (2012), the reason for understanding the type of data is:

1- It is easy for analysis software to generate statistics.
2- Access to greater analytical techniques when the scale of measurement is precise.

The next step is to prepare a codebook, which is a summary of the instructions, and it is used to convert the obtained information into a suitable format (Pallant, 2011). For this research, each case was converted into SPSS format, which was selected for the analysis of quantitative data from questionnaires. Therefore, the codebook was developed for these questionnaires as can be seen in the Appendix.

According to Pallant (2011), using a codebook helps to define and label each variable and allocates numbers to each of the possible responses. In the codebook in this research, all dependent and independent variables, abbreviated names of these variables and the response codes were listed. The name of each variable for this research was based on the name of each identified dimension (corporate strategy, technology and culture) and eCRM readiness to make the output easy to read.

Before entering data into SPSS, each response needs the allocation of a numerical code. For some variables, this is an easy process, but for others, such as gender, it is necessary to convert to numbers. The questionnaire uses a five-point Likert-scale, therefore for each possible answer one value is added, i.e. 1 is equal to strongly disagree and 5 is equal to strongly agree. SPSS software was selected for the analysis of data in this research, but it was important to get to know SPSS, and therefore the researcher attended some training sessions.

The final stage is to prepare the data for analysis by creating a data file, enter data based on the research codebook and check the errors. Any error can disrupt the analysis and impact on the outcome (Pallant, 2011), hence checking errors is an important part of data entry. The process of screening and cleaning of data will be discussed in chapter 5 in more detail but in general this process involves checking the range of scores for each variable and finding, correcting or deleting the errors.

3.11 Summary

In this chapter, the research methodology has been developed. The methodology describes the stages that were carried in the research process. This chapter briefly reviewed how the work carried out relates to the main philosophical stances, approaches and strategies. In addition, the research design was operationalised into a protocol in order to proceed with the data collection process.

The research work carried out follows a deductive approach, which is suitable for the purpose of this research. Following this, the mixed methods approach selected as enables the researcher to take advantage of triangulation. A structured questionnaire and semi-structured interview were selected, and a justification provided for choosing them as a research data collection method.

Furthermore, the proposed conceptual framework for assessing eCRM readiness and maturity in banks has been developed based on the review of the literature. As the mixed-methods approach was more appropriate to validate and understand the proposed framework, measurement scales for each identified dimension were developed, based on the researcher's understanding from the literature.

A pilot study was conducted before the main survey to measure the reliability and validity of the questionnaires. Ethical issues were discussed as an important part of the research to prevent risks. Based on research questions, the hypotheses were created. The details of population, sampling, type of data, data coding and data analysis procedure were also discussed in this chapter. In the next chapter, analytical techniques for quantitative data obtained will be briefly discussed.

Chapter 4

Quantitative Analysis

Chapter 4

4. Quantitative Analysis

4.1 Introduction

In the previous chapter, the proposed framework for assessing eCRM readiness and maturity was developed, and the data collection process for this research was described. This chapter will analyse the data that was gained using the selected methodology. The data collected from qualitative and quantitative approaches will be presented and reported on the data analysis. One structured questionnaire which was created and distributed, and finally was collected regarding the eCRM readiness and maturity in five case studies banks, helps in assessing e CRM readiness and maturity in Iranian banks. One designed questionnaire was administrated in five selected banks, and bank employees answered these. In order to understand the research problems, interviews with banks decision makers were conducted.

The findings from interpreting the interviews, along with findings from analysing the questionnaires, help the researcher to find the similarities and differences between results from different perspectives of bank stakeholders in terms of eCRM readiness and maturity, who are bank managers, and employees. Finally, these perspectives help the researcher to propose the framework from the qualitative and quantitative data obtained for assessing eCRM readiness and maturity in Iranian banks. Based on the qualitative and quantitative data, different analyses were used, including the Statistical Package for Social Science (SPSS), NVivo and, Amos.

4.1.1 Objective of This Chapter

- Illustrate the statistical tests used in data analysis.
- Discuss the finding of the quantitative approaches.
- Present the findings from interpreting quantitative data.

This chapter aims to discuss the methods of data collection and describe the statistical tests that have been chosen.

4.1.2 Chapter Structure

The chapter starts with a brief introduction then it identifies the objectives of the chapter. In the next part, the chapter will discuss the data analysis strategy, which will help to identify and justify the analysis technique for the current research. The chosen analysis strategy and technique will help to analyse the data from the five case study banks. Finally, the chapter will end with a summary discussing the findings of the chapter.

4.2 Quantitative Data Analysis

The data which was gathered using the research justified methods will be analysed. This chapter is concerned with analysing and uncovering the relationships between dependent and independent variables. The research adopted quantitative and quantitative methods in which a survey questionnaire and interviews were used in order to obtain the necessary data. Analysing the qualitative and quantitative data will help the researcher to compare the findings from both approaches and identify any similarities and differences between them, thus revealing the framework for eCRM readiness and maturity assessment.

4.2.1 Data collection process

In Chapter 3, the data collection plan was developed. It aimed to acquire data on eCRM readiness and maturity from the case study banks, which helps to assess and evaluate the feasibility of the current research, proposed conceptual framework, and consequently identify the factors affecting eCRM readiness in Iranian banks and assess readiness and maturity of eCRM in them. The sources of data are mainly primary or secondary. For primary data, data need to be collected from interviews, surveys and observations while for secondary data, any publications the banks may have, as well as any publications of research in the field can be included. The following aspects of eCRM development need to be identified:

- Strategic view of eCRM solution and to find out how the banks think that eCRM can help them with their operations.
- Operational issues from a management perspective concerning how eCRM solutions can be deployed.
- Employee perspectives of training required, and support provided.

In order to achieve qualitative and quantitative data, it needs to use a mixture of methods. There is a variety of methods of data collection available for qualitative research, including observations, textual or visual analysis and individual or focus group interviews. There are three fundamental types of research interviews: structured, semi-structured and unstructured.

Semi-structured interviews have been selected for this research because the interview is based on a set of structured questions, while at the same time providing scope for the respondent to elaborate on or raise certain points.

In this method, different interviewers have greater flexibility and may introduce specific questions depending on the respondents' answers (Wilson, 2012). This method is appropriate for interviewing focus groups and gaining more in-depth knowledge about them, which in this case includes a small number of Iranian bank decision makers. A focus group interview is a group interview that concentrates on particular issues, products, services or topics by encouraging discussion amongst participants and the sharing of perceptions in an open and tolerant environment (Creswell, 2014).

This research is a combination of interpretive and statistical analysis. Interview data will be analysed interpretively, giving in-depth data. Structured questionnaires will also be statistically analysed, using the Statistical Package for the Social Sciences (SPSS). The use of a combination of methods for data collection and data analyse can add strength to research results and their review, enabling revisions to be made to an initial framework. This research leads to stakeholder analysis and perceptions of eCRM deployment problems in the Iranian banking sector.

4.2.1.1 Examining of Data

This section presents the process of cleaning of data, which it is necessary before its analysis. In this section, two groups of problems are discussed which are: (1) the accuracy of data input and missing observations and (2) outliers and data normality and reliability which is necessary to understand in order to ensure the validity of data for analysis.

4.2.1.2 Data Cleaning

Preparation of data for analysis is important and involves a number of steps. These steps include creating a data file and entering the data obtained in a format defined by the codebook.

All variables in this study were named and coded before entering any data. In addition, after defining each variable, the data was entered in order to be analysed.

The check for data errors is vital before any data analysis is carried out. The errors can be arising by making mistakes when entering data and can affect the data analysis. Outliers are values that lie well below or well above other scores (Pallant, 2011). Therefore, fixing the errors at the first stage is better than repairing them later.

Screening of data includes checking any finding and errors and then correcting them in the data file. All values that fall outside the range of possible values for a variable were checked for errors and any mistakes corrected. This process was done by inspecting the frequencies for each variable. All questionnaires with 75% of answers were included, while those with more than 25% of questions unanswered were excluded from the data analysis (Sekaran and Bougie, 2013).

4.3 Descriptive Analysis

Before the start of the descriptive phase of data analysis, the researcher must make sure that there are no errors in the data file. Descriptive data describes the characteristics of the sample. In the meantime, descriptive statistics check the identified dimensions in the research for any violation of the assumptions that will be used to address the research questions (Pallant, 2011).

The descriptive analysis allows assumptions to be made about the people that have been measured but this summation cannot be generalised to other people or objects. Descriptive analysis helps the researcher to describe the basic features of the data. Typically, in most research conducted on people, both descriptive and inferential analysis will be used to analyse results and draw conclusions. In other words, using descriptive data is a way to describe the data.

If only the raw data is presented, it will be hard to visualise the data. Therefore, descriptive analysis enables the researchers to present the data in a more meaningful way, which allows a simple interpretation of data. A descriptive analysis in this study helps to examine the demographical variables, including specifications of respondents, educational level and age. Therefore, in the next section, the frequencies of specifications of bank employees are explained.

4.3.1 Frequencies

Frequency was used to present and analyse the demographic characteristics in this research. An appropriate number of questionnaires for this research is 377 for employees, so 400 questionnaires were distributed among bank employees in the five case study banks. 382 eligible questionnaires were returned with the response rate of 95.5%, which is more than the significant target sample size number of 377. Then, the number of 18 invalid questionnaires were eliminated due to their inaccuracy or incompleteness. Response rate can be calculated by dividing the number of responses to the survey by the number of people the survey was sent to and multiplying the result by 100. The number of eligible returned questionnaires in this study illustrates the high level of cooperation from bank employees and, as it exceeded the required sample questionnaires, it is considered as satisfactory in terms of numbers. In addition, Figure 4-1 is a data view of this study.

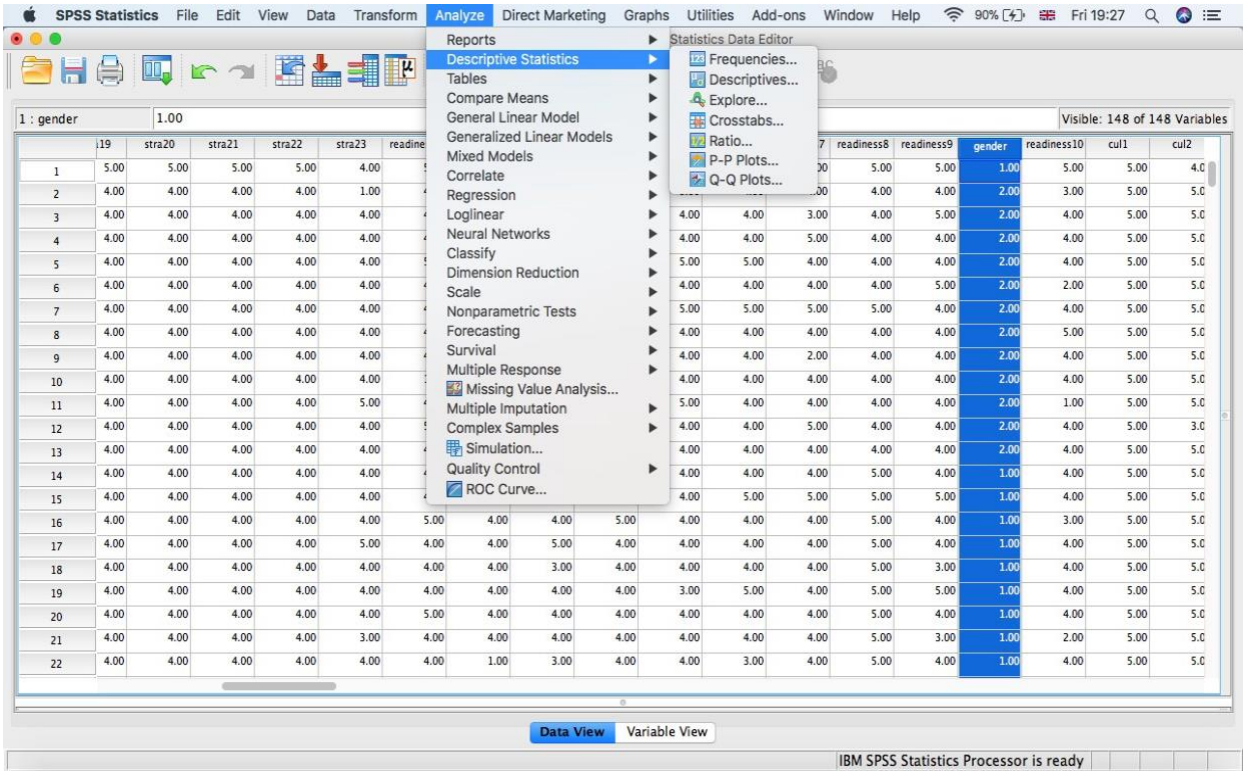


Figure 4-1: Data view

4.3.2 Employees Respondents

In order to analyse the employee's data, SPSS software was used. The variable view seen in Figure 4-2 shows the properties of each variable. As mentioned in section 3.6.4, each variable is a question for measuring the factor in the relevant dimension. For example, first question (Q1) which was

named as stra1 is measured the strategy dimension (goals factor). In addition, the full variables list has been provided in the appendix.

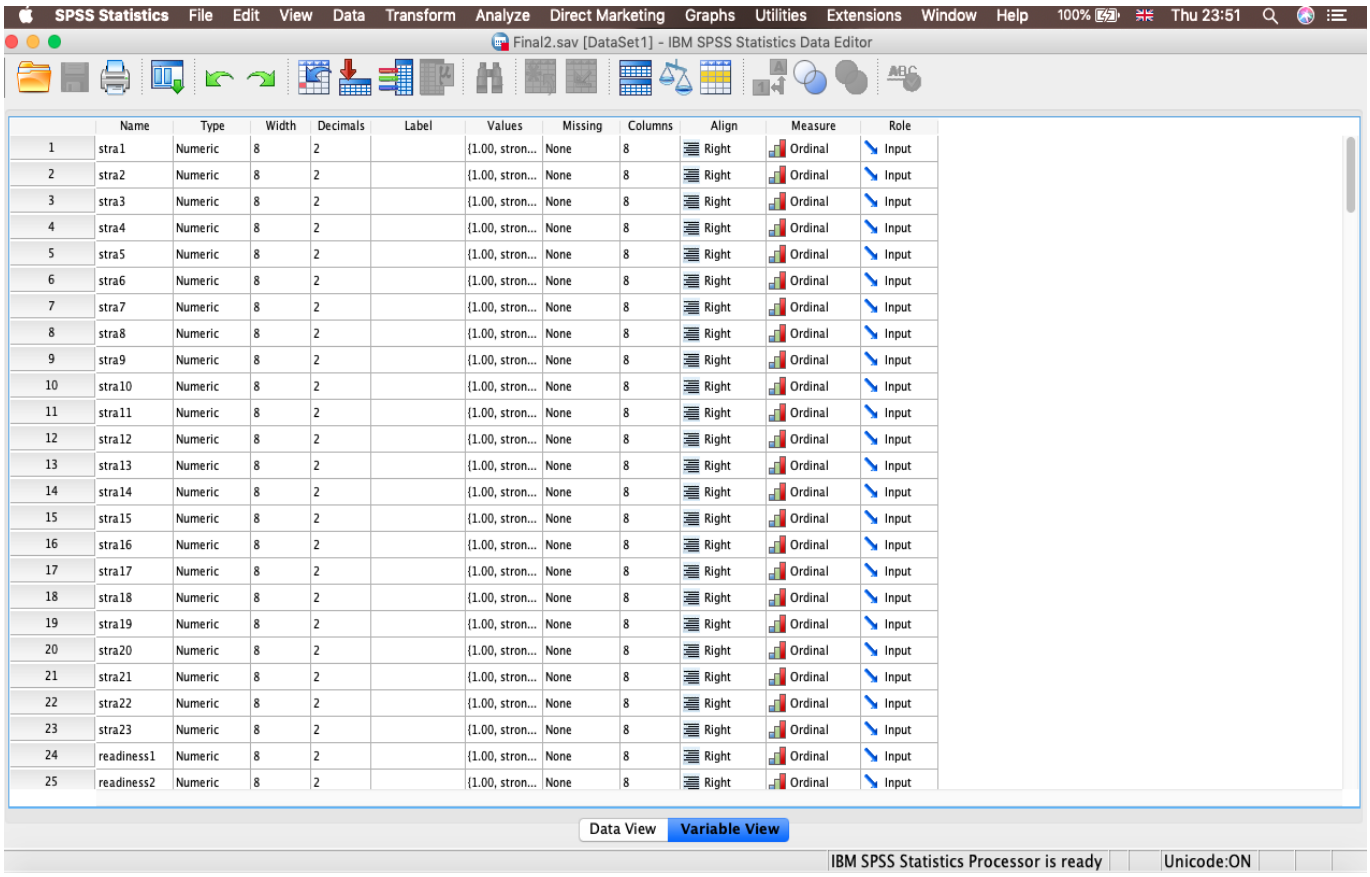


Figure 4-2: Variable view

Analysis of the employees' questionnaires using SPSS shows that 60.4% are males and 39.6% are females (Figure 4-3). Regarding age, 11.4% are 20 to less than 30, 38.7% are 31 to less than 40, 39.2% are 41 to less than 50, and 10.7% are more than 50 years old. In terms of the period of their employment in the banks, 9.4% is less than two years, 16.1% are between two to five years, 27.8% are between five to eight years, and 46.7% are more than eight years in the banks. 22% are in IT department, 34% are in the service department, 18.7% are in cash, and 25.3% are in the operation department. 0% have less than a bachelor's degree in education, 8% have a PhD degree, 62.9% have a bachelor's degree, and 29.1% have a master's degree. However, this study has not investigated the effect of demographic characteristics of employees, such as gender, age or, educational level on eCRM readiness and maturity. Therefore, the researcher has not used this information in order to analyse the data and these questions only illustrate the participants' characteristics in this study.

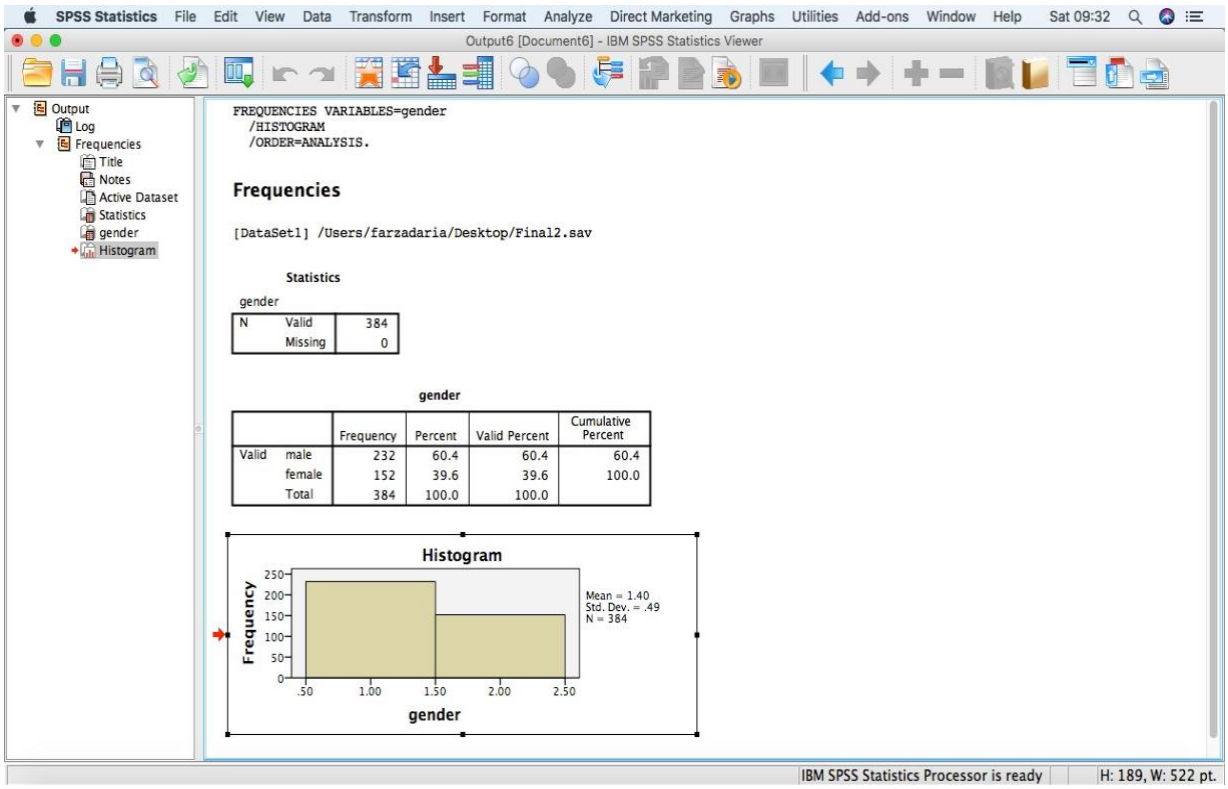


Figure 4-3: Customers' frequencies

4.3.3 Dimensions Respondents

The identified dimensions and associated factors can be measured using a Likert-scale questionnaire. Based on GQM theory, for each factor, an appropriate question(s) is created which will be measured using a Likert-scale questionnaire. Therefore, in order to analyse the obtained data in SPSS, each question for each factor was labelled, and the data for each individual case entered. As can be seen in Figure 4-4, for the organisational culture dimension, 17 questions (section 3.6.4) were labelled as cul1 to cul17. In addition, the frequency of each dimension and factor was calculated using descriptive analysis in SPSS.

In this section, the percentage of questionnaire respondents regarding the level of agree, disagree or neutral is discussed which shows the importance of dimensions that are used in the proposed research framework, based on respondents' answers for each question, as mentioned above.

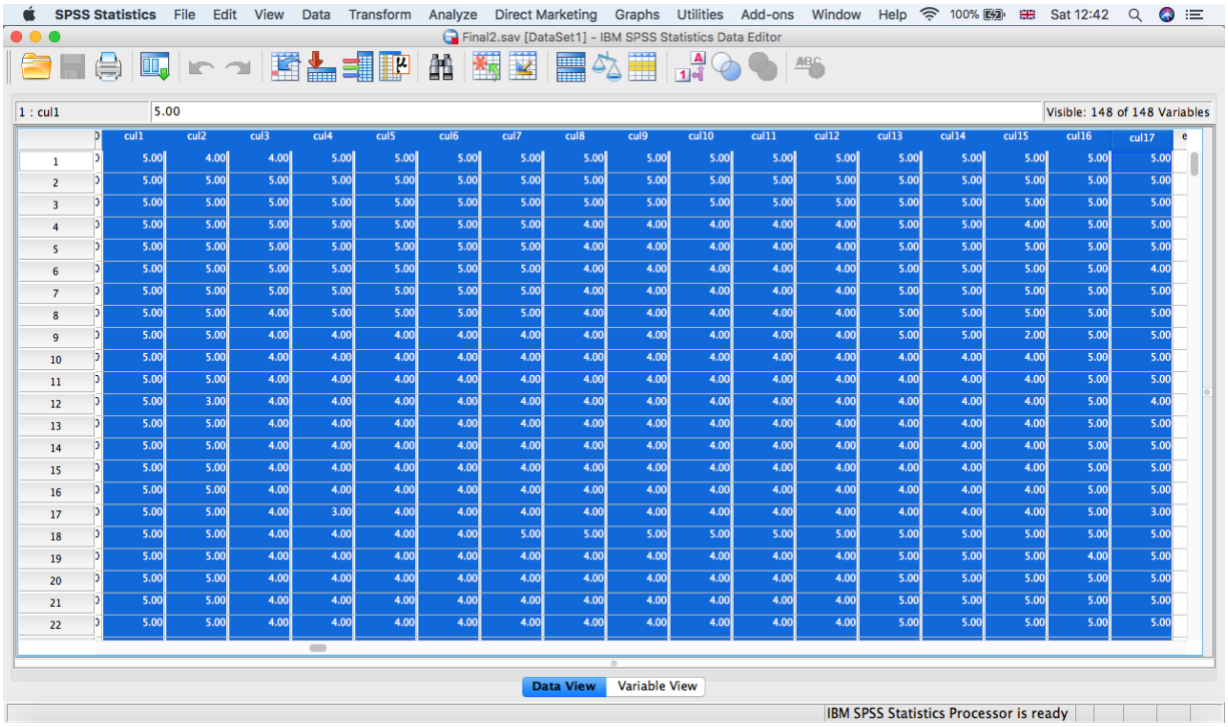


Figure 4-4: Data view for organisational culture dimension

The frequencies for organisational culture dimension show that 19.09% strongly agree, 75.5% agree, 1.85% disagree, 1.06% strongly disagree, with just 2.38% neutral in terms of the importance of organisational culture in the Iranian banking industry. Figure 4-5 illustrates the SPSS analysis output for the cult1 question which has a mean of 4.15 (Figure 4-6).

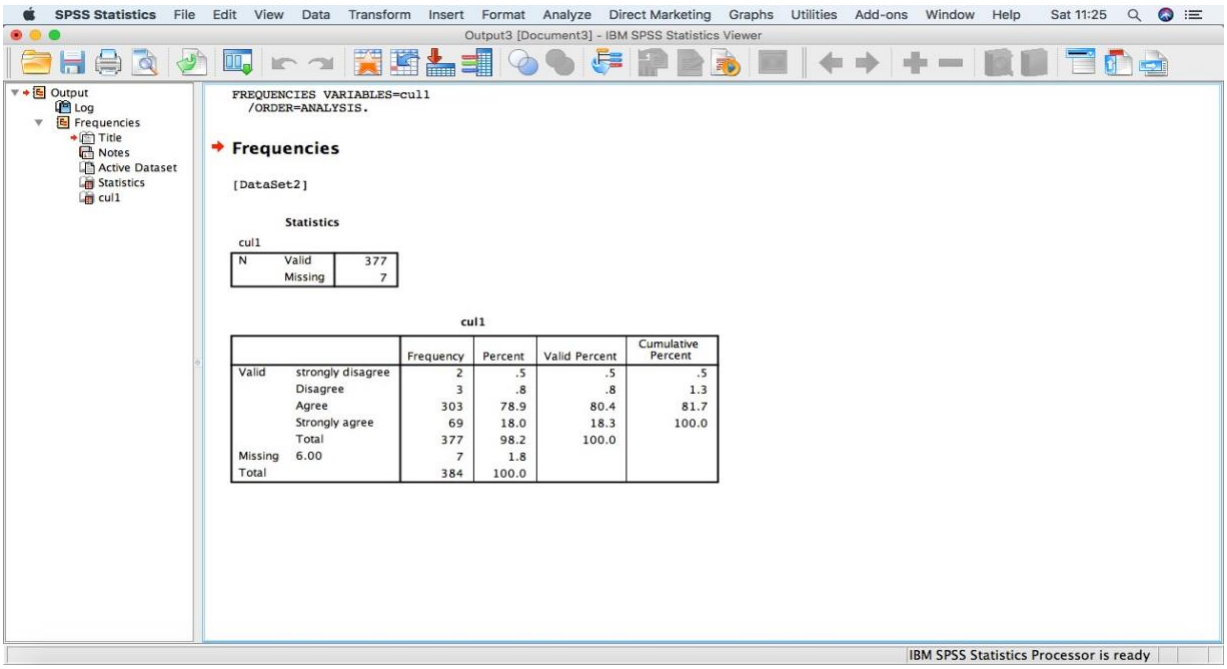


Figure 4-5: Frequencies output for cult1

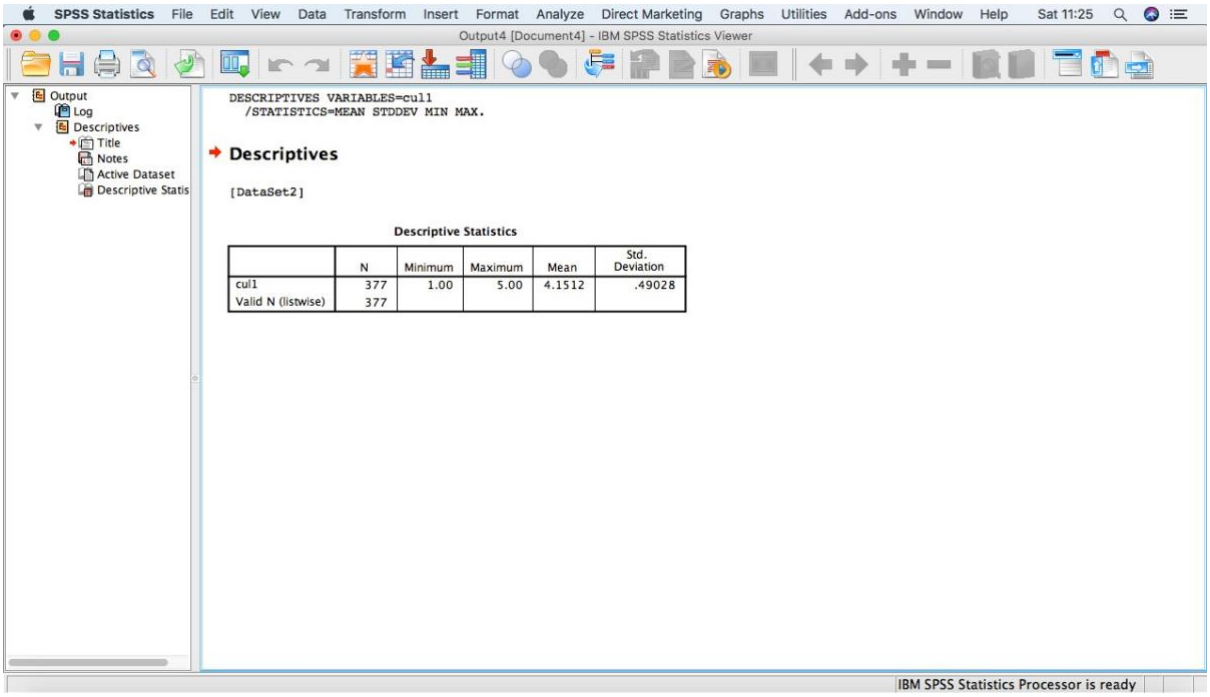


Figure 4-6: Mean for cult1

For the strategy dimension, the frequency shows that 79.8% agree, 1.06% strongly disagree, 1.06% disagree, 2.38% are neutral, and 15.6% strongly agree. This result shows the importance of corporate strategy dimension. This dimension has 23 questions (section 3.6.4), based on four factors which were labelled as stra1 to stra23, as can be seen in Figure 4-7.

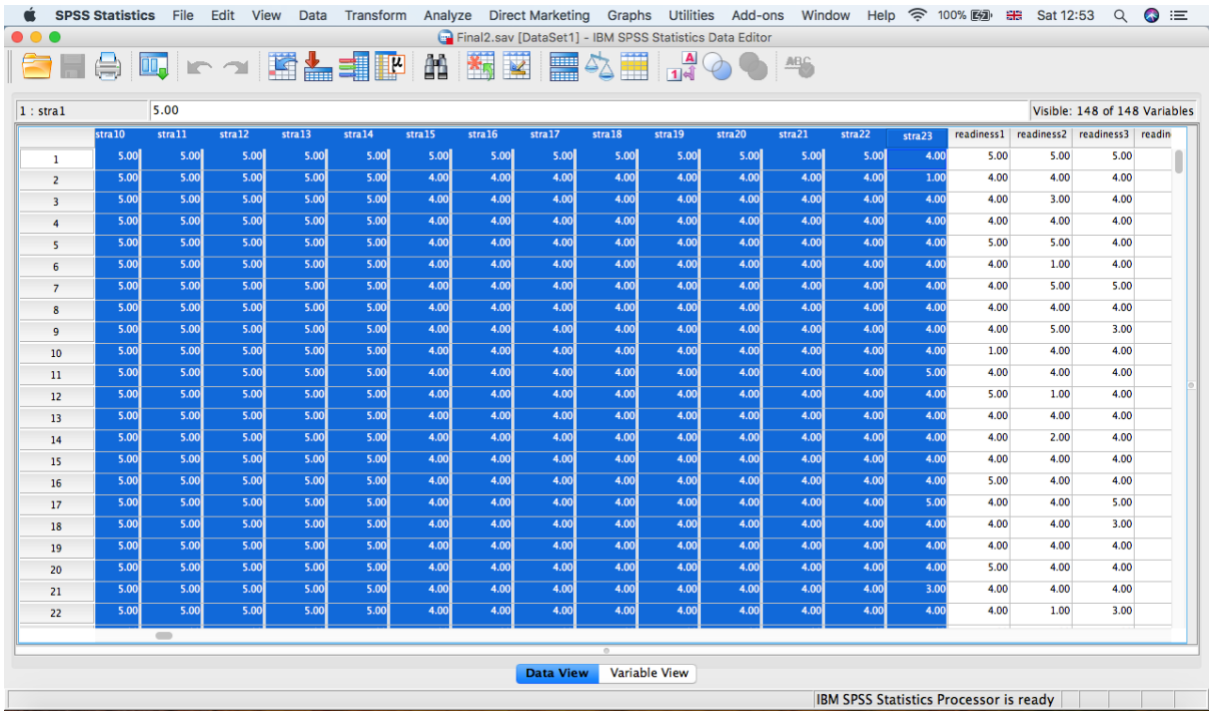


Figure 4-7: Data view for corporate strategy dimension

Another dimension is technology, for which the frequency of respondent percentages shows that 0.53% strongly disagree, 1.59% disagree, 2.91% are neutral, 78.2% agree, and 16.7% are strongly agreed, which shows the high percentage of importance of technology. Frequencytest, as a part of the descriptive analysis, can help to determine the number of times a data value occurs. Therefore, as is seen in the dimensions frequencies analysis, each identified dimension is essential based on employees' perspectives.

4.3.4 Reliability

Reliability is about consistency, and it helps a researcher to probe the underlying constructs. When a scale is selected for inclusion in a study, it is important to find scales that are reliable as one of the main issues concerns the scale's internal consistency. This refers to the degree to which the items that make up the scale 'hang together'. When a scale is reliable, it shows that it will produce the same or similar results if it is repeated. One of the most commonly used indicators of internal consistency is Cronbach's alpha. Ideally, the Cronbach alpha coefficient of a scale should be above 0.7 (Tavakol and Dennick, 2011; DeVellis, 2011).

According to Sekaran and Bougie (2013), the reliability of a measure indicates the extent to which it is biased and hence ensures consistent measurement across time and the various items in the instrument. Hence, the reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the "goodness" of a measure. Consistency can be measured through the inter-item consistency reliability tests, which measure the consistency of respondents' answers to all items in a measure. If items are independents measures of the same concept, they will be correlated with one another. One of the most famous tests for interim consistency reliability is the Cronbach's coefficient alpha. The closer the reliability coefficient gets to 1.0, the better but in general reliabilities of approximately 0.7 are acceptable, while those less than 0.6 are considered as poor, and over 0.8 are good.

The scales used in this study were five-point Likert scales and measured eCRM readiness and employees' eCRM perception in banks. The reliabilities for this research were measured based on dimensions and number of questions by using Cronbach's alpha test. The overall reliability of the scale, as shown in Figure 4-8, indicates 0.788 as a good level of consistency since the minimum acceptable reliability is 0.5 (Sekaran, 2003).

For strategy dimension (Figure 4-9) is 0.689, organisational culture is 0.683, technology 0.611, and readiness is 0.769 (Figure 4-10). According to Sekaran and Bougie (2013), the minimum acceptance reliability value is 0.5 and, a value of more than 0.5 is acceptable. Therefore, all scales are reliable. In addition, Table 4-1 shows the reliability of each scale.

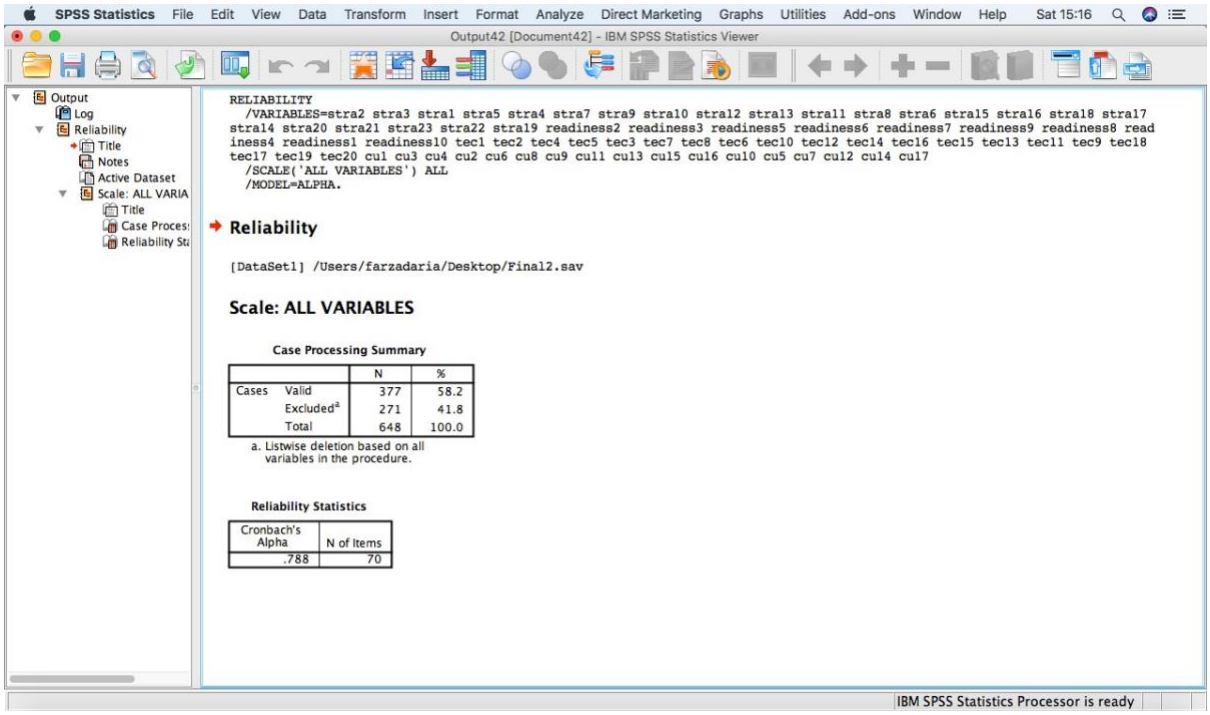


Figure 4-8: Overall reliability of scales

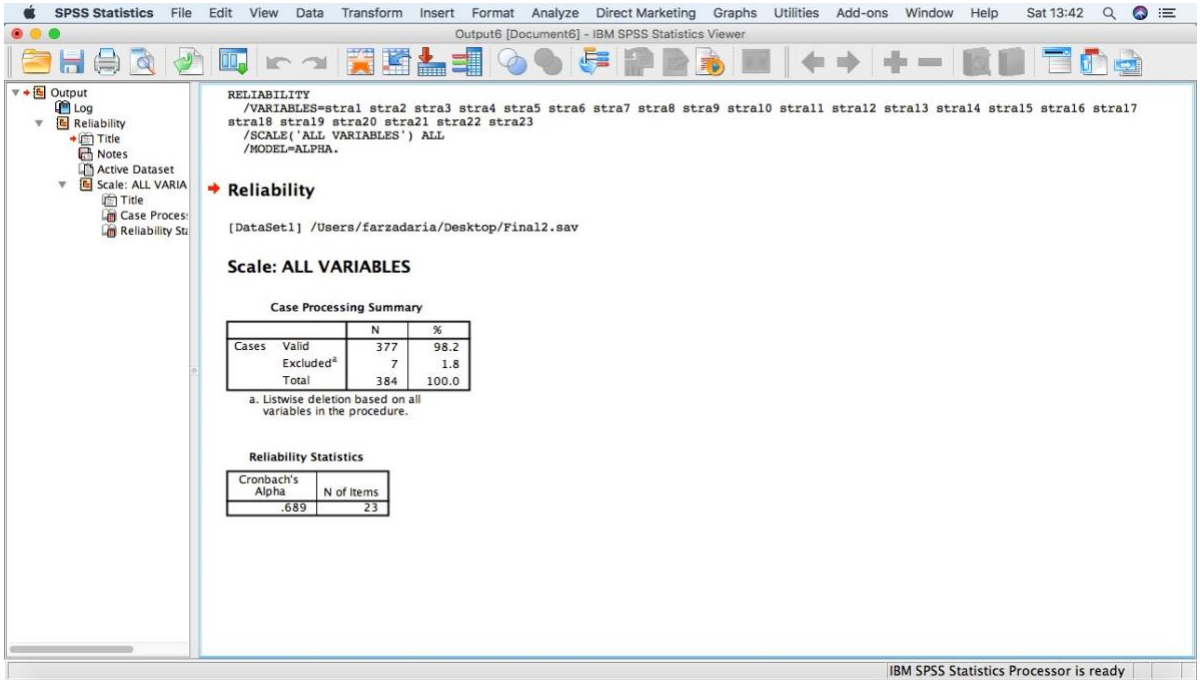


Figure 4-9: Reliability for corporate strategy dimension

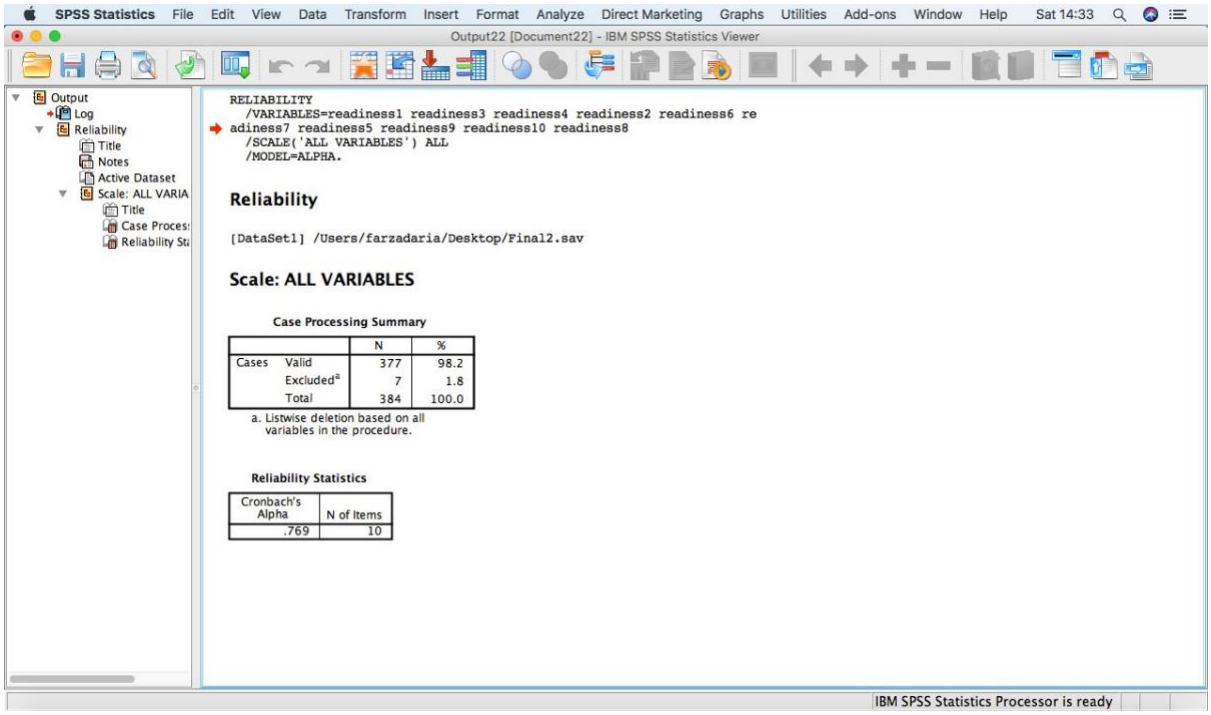


Figure 4-10: Reliability for readiness

Table 4-1: Reliability of scales

Scale	Number of Items	Cronbach alpha
Corporate strategy	23	0.689
Organisational culture	17	0.683
Technology	20	0.611
Readiness	10	0.769
Overall	70	0.788

As mentioned, Cronbach's alpha is the most common measure of internal consistency, especially when there are multiple Likert questions in a survey or questionnaire that forms a scale. Therefore, in order to determine if the scale is reliable, the questions were labelled; for example, for corporate strategy dimension, 23 questions labelled stra1 through to stra23, and then SPSS is conducted. In addition, the reliability analysis was used to measure the reliability of eCRM readiness dimensions in this research. Reliability means consistency of stakeholder's responses across the items on a multiple-item measure and all the items on such measure are supposed to reflect the same underlying construct. In other words, bank stakeholders scores on those items should be correlated with each other; otherwise, it is not possible to claim that they are all measuring the same underlying construct. Therefore, reliability helped the researcher to understand whether the criteria (questions) in the eCRM readiness questionnaire all reliably measure the same latent variable (eCRM readiness).

4.3.5 Normality

To determine if a data set is well-modelled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed, it is necessary to use a normality test (Sekaran and Bougie, 2013). The term 'normal' is used to describe a symmetrical, bell-shaped curve, which has the highest frequency of scores in the middle with smaller frequencies towards the extremes (Pallant, 2011). Testing the normality is a prerequisite for many statistical analyses. The main tests for assessment of normality are the Kolmogorov-Smirnov (K-S) test; the Lilliefors corrected (K-S) test, the Shapiro-Wilk test, and the Anderson-Darling test (Singh and Masuku, 2014; Oztuna et al., 2006). Among these, K-S test is a much-used test and can be conducted in the SPSS. The K-S test is an empirical distribution function (EDF) in which the theoretical cumulative distribution function of the test distribution is contrasted with the EDF of the data. According to (Ghasemi and Zahediasl, 2012), it is preferable that normality be assessed both visually and through normality tests and it seems that the most popular test for normality is the K-S using SPSS. Therefore, in this research K-S was used for testing normality. As normality test report a P value, the researcher needs to know the null hypothesis in order to understand the P value. The null hypothesis for this research is:

H_0: The sample data are not significantly different from a normal population.

H_a: The sample data are significantly different from a normal population.

Probabilities greater than 0.05 mean data are normal, while less than 0.05 means data are not

normal (Sekaran and Bougie, 2013). Therefore, according to the Kolmogorove-Smirnov test, the significant level for strategy is 0.000, which is less than 0.05, and it shows that H0 must be rejected, so H_a accepted. This data is not normally distributed.

In addition, normality can be determined graphically (Pallant, 2011). The output of a normal Q-Q plot can be used to determine normality graphically. The data points will be close to the diagonal line if the data is normally distributed, but the data is not normally distributed if the points stray from the line. This can be used to interpret the outcome graphically. As can be seen in the normal Q-Q plot below (Figure 4-11), the data is not normally distributed for organisational culture dimension.

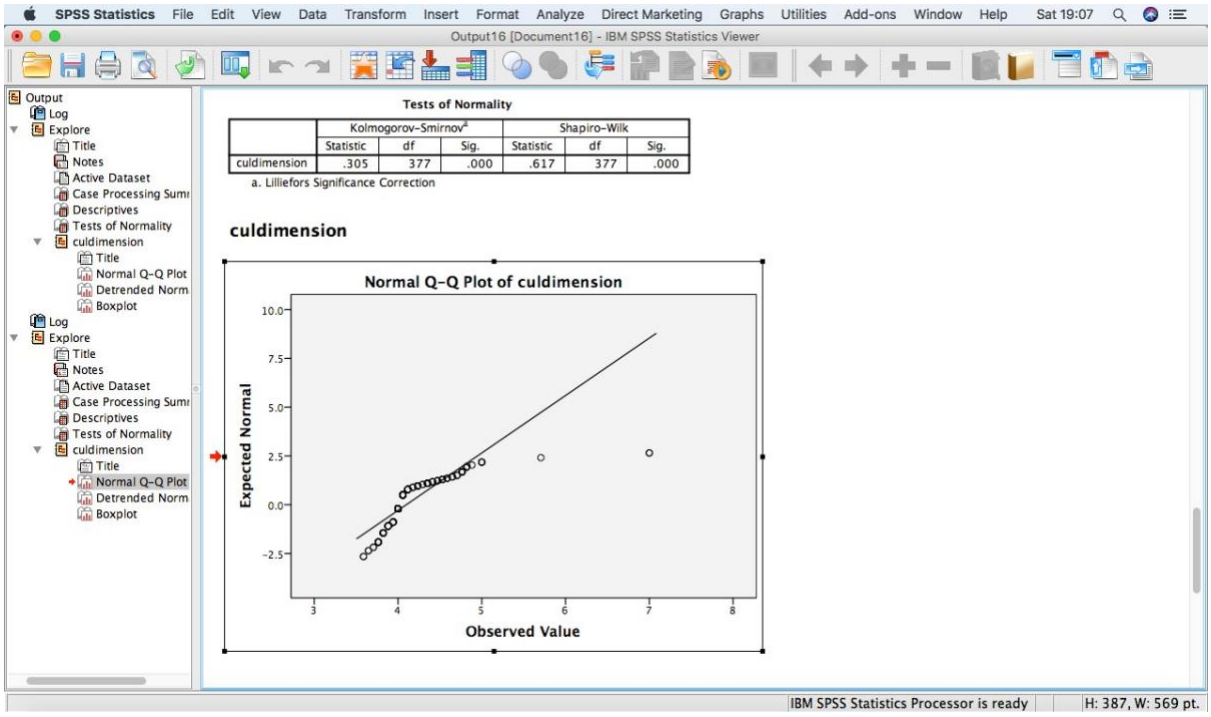


Figure 4-11: The normal Q-Q plot for organisational culture

As can be seen in Figure 4.12, when testing for normality, the interest is just in the **Test of Normality** table and the **Normal Q-Q plots**, the numerical and graphical methods for normality check. The table as shown presents the results from two well-known normality tests. These tests are the Kolmogorov-Smirnov and the Shapiro-Wik tests. Figure 4-12 below shows that strategy dimension was not normally distributed as the significant value (sig.) of the K-S is 0.000, and this value is below 0.05. In other words, the data significantly deviate from a normal distribution. For checking the normality using a Q-Q plot, if the data points are close to the diagonal line, the data will be normal. Based on the Q-Q plot in Figure 4-12, the data points stray from the line in an obvious non-linear fashion. Therefore, the data is not normally

distributed. However, numerical methods seem more reliable than graphical methods for checking normality.

The normality test is a prerequisite for many statistical tests such as pragmatic tests. Therefore, in order to meet this assumption, the test for organisational culture was conducted. The K-S test, as the most popular normality test (Ghasemi and Zahediasl, 2012; Oztuna et al., 2006), was conducted in SPSS, which provides normality. If the assessment value is greater than 0.05, then this indicates the normality (Ghasemi and Zahediasl, 2012). Therefore, as for the organisational culture dimension, the significant level is 0.000, which is less than 0.05. Therefore, the data are not distributed normally.

For the technology dimension, the data are also not normally distributed, as the significant level is less than 0.05.

Finally, from the normality test table, it was evident that the significant level for eCRM readiness is less than 0.05, showing non-normal normality.

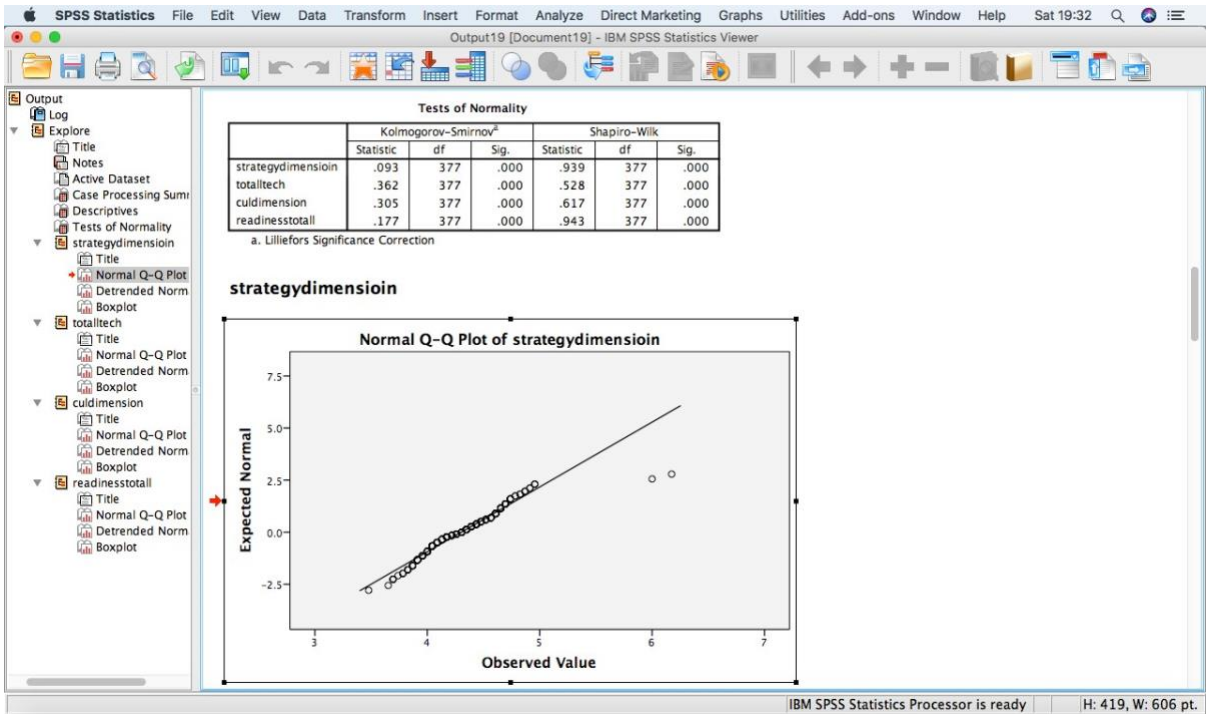


Figure 4-12: The Q-Q plot for corporate strategy

To summarise, it is important to assess the normality assumptions before conducting any statistical test. Assessing normality helps a researcher to select an appropriate statistical test from parametric and non-parametric tests. When the data is normally distributed, the

parametric tests will be used, but in cases of non-normal distribution, the non-parametric analysis will be conducted. According to Pallant (2011), violation of the assumption of normality is quite common in larger samples, as in this research. Some researchers, such as Tabachnick and Fidell (2007), believe that for analysing data it is not always required for normality distribution but, as only some statistical tests rest upon the assumption of normality, it is crucial to check normality before selecting any types of statistical tests to test the research hypothesis. The next section discusses the selected statistical test for this study, based on normality test outcomes.

4.4 Statistical Test for This Research

As mentioned before, a number of statistical analyses were used in this research in order to answer the research questions. The data obtained from qualitative and quantitative approaches were analysed using SPSS, NVivo, AHP, and RADAR logic. Due to the non-normality distributed data in this research, the non-parametric tests (which can also be called distribution-free tests) were used as the research data did not meet the assumption of the parametric test. Therefore, the statistical tests which are used in this study are as follows:

- Descriptive analysis - used in order to describe the basic features of the data in a study and to provide simple summaries about the sample and the measures and give insights to the sample structure, educational level and length with banks.
- Reliability analysis - the degree to which an assessment tool produces stable and consistent results. Cronbach alpha test was used in order to measure the reliability of e CRM readiness and maturity.
- Normality analysis - shows whether the data was collected from a normally distributed population. In order to assess the normality, the Kolmogorov-Smirnov test was used which shows the researcher the appropriate parametric or non-parametric tests for testing the hypotheses.
- In order to test the effect of independent variables on dependant variables in this study, the Chi-square test was used which helps the researcher to assess the impact of organisational culture, technology and corporate strategy as independent variables on eCRM readiness as a dependent variable. According to McHugh (2013), the Chi-square statistic is a non-parametric tool, and some of the advantages of using it are its ease of computation, flexibility in handling data, its use in researches for which

parametric assumptions cannot be met, and the detailed information that can be derived from the test. As in this research, the hypothesis must be tested in order to answer the research questions. Therefore, the Chi-square test of independence or the Person Chi-square test is used for testing hypotheses (McHugh, 2013).

- Confirmatory Factor Analysis - used to test how well the measured variables represent the number of constructs. The researcher can specify the number of factors required in the data and which measured variable is related to which latent variable.

4.5 Hypotheses

As mentioned (chapter 2), the researcher assumed three hypotheses. All these hypotheses help to answer the main and sub-questions of this research. The first hypothesis of this research is about the effect of the corporate strategy dimension on eCRM readiness; the second hypothesis is related to the effect of organisational culture on eCRM readiness, and the third hypothesis is related to the effect of technology on eCRM readiness.

In this research, the Chi-square test is used to analyse whether organisational culture, technology, and corporate strategy affect the readiness of banks for eCRM adoption. According to Sekaran and Bougie (2013), if the significance level is less than 0.05, it shows that the relationship between variables is significant, but if the significant level is higherthan 0.05, it shows that the relationship between two variables is not significant. These values in this research illustrate that whether there is a relationship between eCRM readiness as a dependent variable with independent variables of technology, corporate strategy, and organisational culture.

4.5.1 Hypotheses Testing

In order to confirm a hypothesis, it is necessary to test it using the proposed statistical test. Confirming the hypothesis helps to answer the research questions and solve the problems, which are the main aim and objectives of this research. Therefore, for each hypothesis, the results of the analysis are discussed.

H_1: There is an association between corporate strategy and eCRM readiness

It is essential to identify whether corporate strategy affects eCRM readiness in banks. This helps the researcher to add or delete this dimension along with its associated factors into the revised framework, which can be used by banks to assess their eCRM readiness. The reviewing literature shows that the strategy is a crucial dimension in eCRM readiness. Therefore, it is

worth testing this hypothesis with the selected statistical tests.

As the normality check for corporate strategy and eCRM readiness illustrate the non-normality of data, non-parametric tests are suitable for this hypothesis. According to Pallant (2011), in order to explore relationships between one categorical dependent variable and one categorical independent variable, the Chi-square test as a non-parametric test can be used.

The Chi-square (x^2) technique is a prominent and as a commonly used member of the non-parametric family that is much easier to compute. With Chi-square, a value is calculated from the data using Chi-square procedures and then compared to a critical value from a Chi-square table with a degree of freedom corresponding to that of the data. If the calculated value is greater than the critical value (the table value), the null hypothesis is rejected. If the calculated value is less than the critical value, the null hypothesis (H_0) is accepted.

H_0: There is no association between corporate strategy and eCRM readiness, accept if significant of variance greater than 0.05
H_1: There is an association between corporate strategy and eCRM readiness, accept if significant of variance is equal or less than 0.05

The formula for calculating a Chi-square is:

$$x_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Where:

C: this subscript is the degree of freedom
O: is the observed value
E: is the expected value

As can be seen, the summation symbol illustrates that for each single data item a calculation must be performed in the data set, but it is evident that the calculation is quite tedious and lengthy, so technology can help the researcher to calculate the Chi-square. Therefore, in order to test the research hypothesis, the Chi-square test was run in SPSS.

Before conducting the selected statistical tests, it is necessary to set up the data. As mentioned in the previous chapter, there are one dependant (eCRM readiness) and three independent variables (corporate strategy, technology, and organisational culture). A Chi-square test for independence typically requires one dependant and one independent variable. As can be seen for the first hypothesis, there are the corporate strategy (independent) and eCRM readiness (dependant) variables. Figure 4-13 shows the variable view window of corporate strategy dimension. As can be seen, all items were defined and valued. For example, as the independent variable is categorical, it can be measured on an ordinal scale. The same coding for the eCRM readiness variable was conducted. In addition, the categories of a categorical variable were coded into a value labels box, one at a time (Figure 4-14).

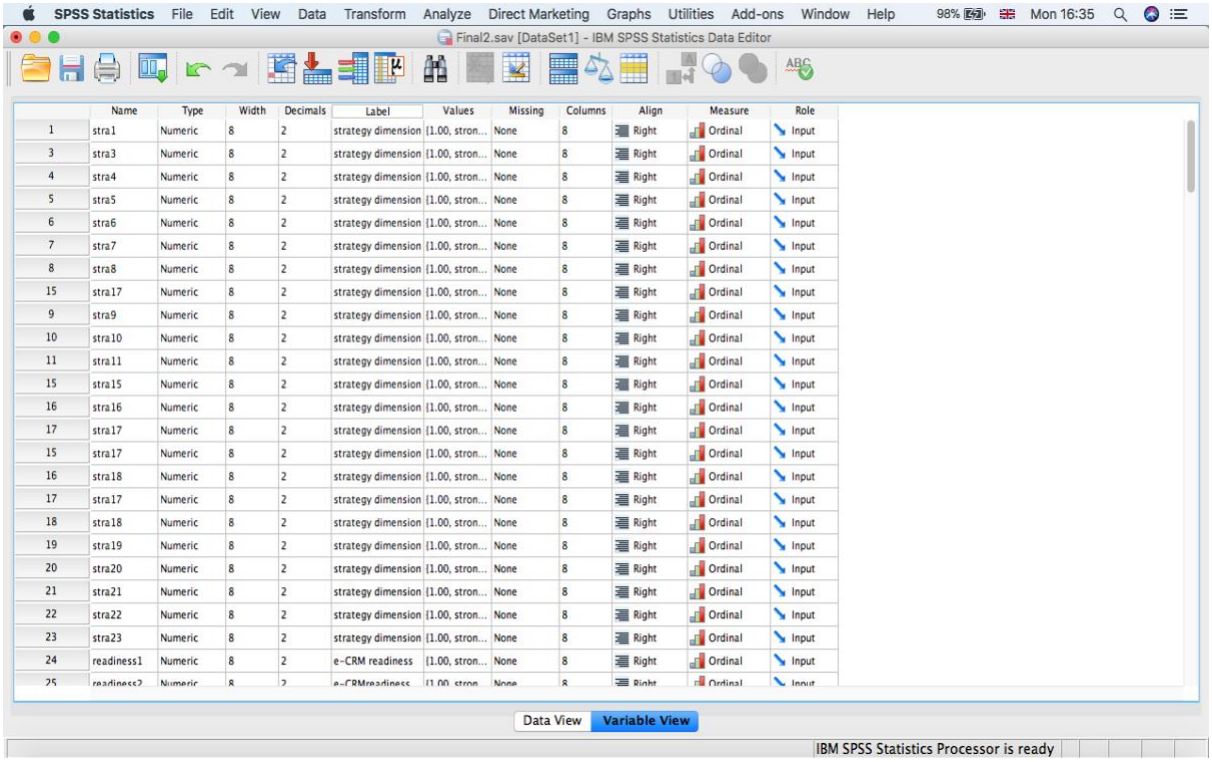


Figure 4-13: Variable view of corporate strategy

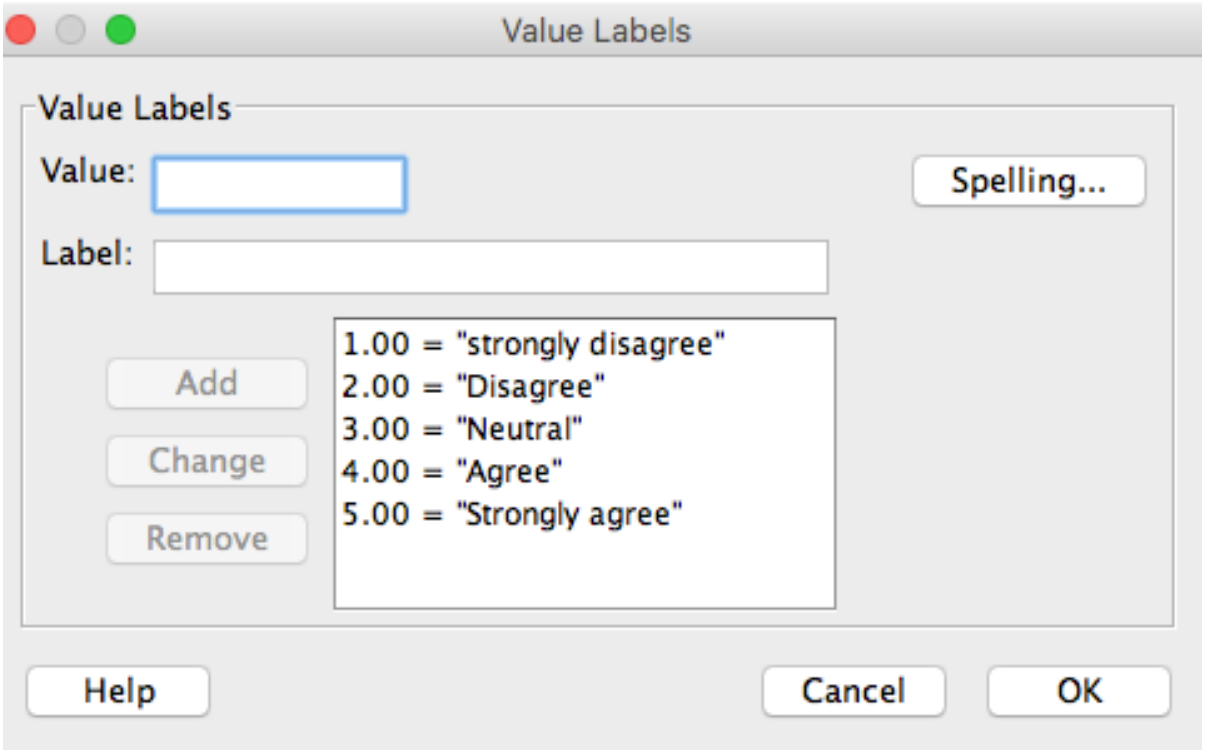


Figure 4-14: Value labels

After successfully entering all data for corporate strategy dimension (Figure 4-15) and eCRM readiness based on each criterion for each case, the next stage is to check the assumptions. As this hypothesis attempts to discover if there is a relationship between two categorical variables, the Chi-square test for independence (which is also called Chi-square test for association or Pearson's Chi-square test) is suitable to check the relationship. However, choosing the Chi-square test for independence needs to make sure the data in the research passes an assumption (Pallant, 2011).

There is an assumption for using the Chi-square test for independence, as follows:

Assumption: there are two variables which should be measured as categorical data (ordinal or nominal level). According to Pallant (2011), there is one categorical dependent variable and one categorical independent variable. As discussed before for testing the H_1, there are two variables which can be measured at ordinal level (eCRM readiness and corporate strategy). Therefore, assumption 1 passes.

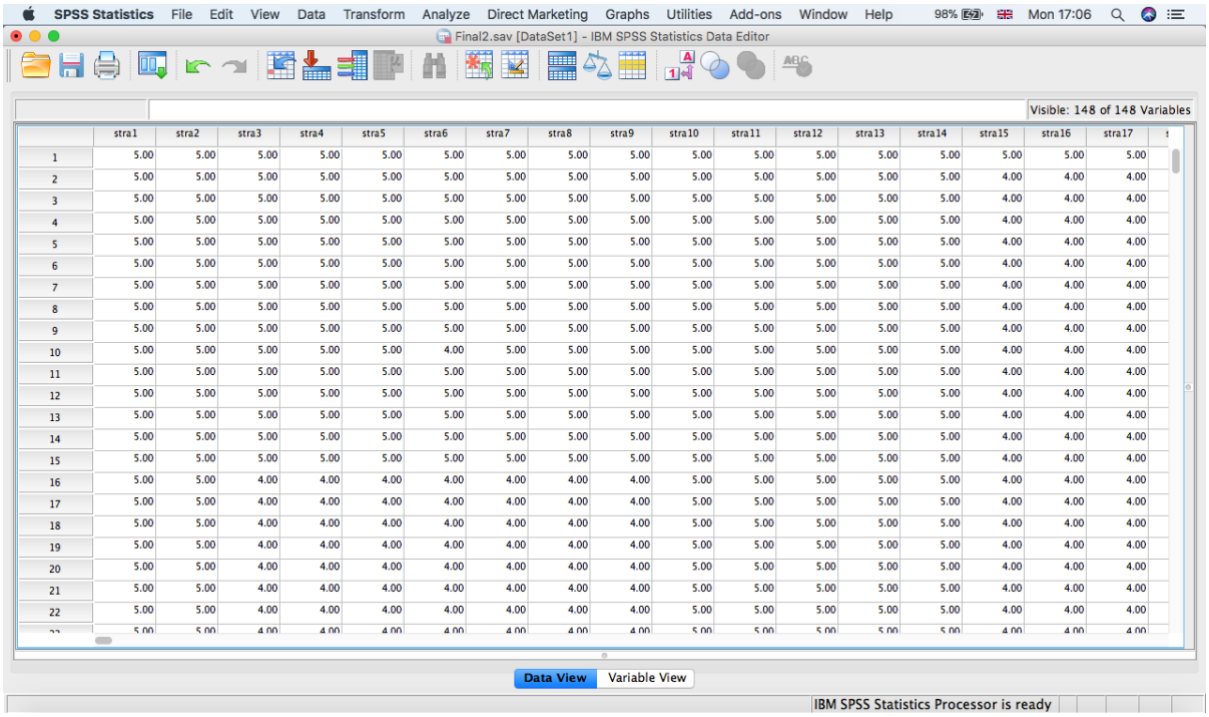


Figure 4-15: Data view for corporate strategy dimension

The Chi-square test checks the association by comparing the observed frequencies in the cells to the frequencies that would be expected if there was no association between the two variables. As the expected frequencies are predicted on there being no association, the greater the association between the two variables, the greater it would be expected that the observed frequencies would differ to the expected frequencies, and vice versa. In other words, the less the two variables are associated, the closer the observed frequencies will be to the expected frequencies. Thus, it can be concluded that the Chi-square test for independence produces a statistic based on the overall difference between the expected and observed frequencies.

In order to run a Chi-square test for independence in SPSS, writing a hypothesis statement is necessary. As mentioned above, the null hypothesis is:

H_0: No association between variable A and variable B ($p > 0.05$).

H_1: An association exists between variable A and variable B ($p < 0.05$).

The Chi-square test for independence will show evidence against the null hypothesis. This can be done by calculating a significance value (p-value). As can be seen, if the p-value is sufficiently small ($p < 0.05$), it can be concluded that there is strong enough evidence against the null hypothesis of independence and that there is an association between two variables in the population, i.e. the alternative hypothesis can be accepted and reject the null hypothesis.

Alternatively, if $p > 0.05$, the null hypothesis cannot be rejected, and the alternative hypothesis also cannot be accepted.

For this study, the association between two variables - corporate strategy and eCRM readiness - are investigated. Therefore, to determine whether there is a statistically significant association between corporate strategy in banks and eCRM readiness, the null and alternative hypotheses are created as follows:

H_0: There is no association between corporate strategy and eCRM readiness in banks.

H_1: There is an association between corporate strategy and eCRM readiness in banks.

It appeared that the p-value is **0.001**. Whenever $p < 0.05$, there is a statistically significant result, and if $p > 0.05$, the result is not statistically significant. Therefore, based on the result, there is a statistically significant result ($0.001 < 0.05$). This means that the two variables are not independent and there is an association between corporate strategy and eCRM readiness in banks.

After interpreting the results and testing the hypothesis, it is important to determine the strength of association. Unfortunately, the Chi-square test for independence does not inform the strength of any association. A measure which can provide an estimate of the strength of the association between two variables is **Cramer's V**.

The value of Cramer's Value is **0.324**. According to Cohen (1988), the Cramer's V ranges in value from 0 to +1, with a value of 0 indicating no association to a value of 1 indicating complete association (Table 4-2). Therefore, the association was medium.

Table 4-2: Value of Cramer's V

Magnitude of effect size	Value of Cramer's V
Small	0.1
Medium (Moderate)	0.3
Large	0.5

The Chi-square test for independence using SPSS for the first hypothesis was 0.001 which is less than 0.05; therefore, H_0 was rejected, and H_1 was accepted which indicates the significant dimension. Testing this hypothesis illustrates that there is a positive impact (moderate) of strategy dimension to eCRM readiness. Also, the literature shows the importance of corporate strategy, and in reality, this test confirms the importance of this dimension with their associated factors in the banking industry. This result confirms the literature according to the importance of the corporate strategy dimension for eCRM readiness. Therefore, investigating this dimension is essential and help banks to assess the overall eCRM readiness, which is important before any eCRM implementation to prevent any failure. In addition, finding the effect of corporate strategy on eCRM readiness contributes to answering the main research question which is the main dimensions that affect eCRM readiness in the banking industry.

H_2: There is an association between organisational culture and eCRM readiness.

As there are two categorical variables in this hypothesis - eCRM readiness and organisational culture - the Chi-square test for independence was used for testing H_2. The null hypothesis is: There is no association between organisational culture and e-CRM readiness.

It appeared that the p-value is **0.000**, but this is impossible. Whenever SPSS statistics shows a value of 0.000, it means that $p < 0.0005$; it does not mean zero. The p-value to more decimal places is 0.000350.

According to Sekaran and Bougie (2013) and Pallant (2011) who believe the Chi-square significant value is equal or less than 0.05, based on the result the null hypothesis was rejected, and H_2 is accepted. Therefore, there is an association between organisational culture and e CRM readiness as $0.000 < 0.05$. In addition, Cramer's V is **0.294,** and this means the moderate association between two variables. This finding helps the researcher to identify another important dimension for banks in order to access the readiness level of eCRM.

H_3: There is an association between technology and eCRM readiness.

Technology is one of the important dimensions for eCRM readiness and, without technology, deploying eCRM is impossible. Therefore, testing this dimension can help the researcher to revisit the initial framework and confirm whether this dimension affects the readiness of eCRM. Theoretically speaking, this dimension is crucial for both readiness and maturity of e CRM.

It was assumed that the technology does not impact on eCRM readiness but in order to test

this dimension's importance, it is necessary to use the selected statistical tests to identify the real effect of technology on eCRM adoption in banks.

The value 0.012 is less than 0.05, in other words, it means the value is significant (Sekaran and Bougie, 2013). Therefore, H_3 is accepted, and there is a relationship between the technology dimension and its associated factors with eCRM readiness.

According to literature, use of technology is one of the important dimensions for eCRM success. Furthermore, the findings illustrate the impact of technology on eCRM readiness. Therefore, it can be derived that technology, identified by reviewing literature as an important dimension for readiness of eCRM, in reality, is an essential dimension to assess the readiness of eCRM in banks. Thus, this finding supports the literature.

4.5.2 Testing the hypotheses using a tool

In order to test an association between two variables, a tool was created which helps bank managers and also researchers. This tool can help to conduct the Chi-square test of independence for categorical variables. Managers need to choose their categorical variables and insert an observed frequency for each category in order to test the relationship between variables.

This tool is used to determine whether two sets of data are independent of each other. Such data is displayed in an R*C contingency table, where R is the row and C is the column. As can be seen in Figure 4-16, two variables A (strategy) and B (readiness) along with five categories (cat1(strongly disagree), cat2 (disagree), cat3 (neutral), cat4 (agree), and cat5 (strongly agree)) are described the contingency table. This two-way table is a useful tool for investigating an association between two variables.

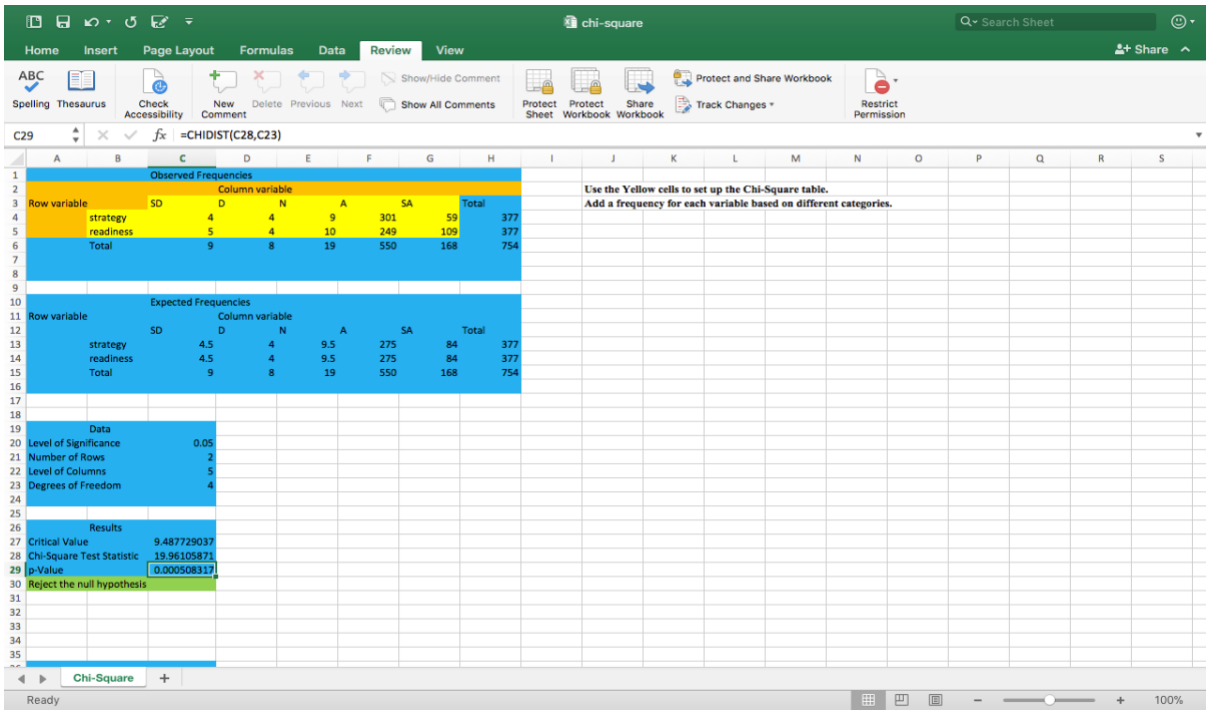


Figure 4-16: Chi-square test tool

In order to test the relationship between variable A and variable B, which are independent and dependent variables in this study, four steps need to be followed:

- State the hypothesis:

H_0: variable A and variable B are independent

H_a: variable A and variable B are not independent

- Formulate an analysis plan:

Significance level: 0.05

Using the Chi-square test of independence

- Analyse data

Degree of freedom (DF): is equal to (r-1) (c-1)

Expected frequencies: is computed according to this formula: $E_{r,c} = (n_r * n_c)/$ n where

$E_{r,c}$ is the expected frequency count for level r of variable A and level c of variable B

n_r is the total number of sample observation at level r of variable A

n_c is the total number of sample observations at level c of variable B

n is the total

Chi-square test: $x^2 = \sum [(O_{r,c} - E_{r,c})^2 / E_{r,c}$

where:

$O_{r,c}$ is the observed frequency count at level r of variable A and level c of variable B
$E_{r,c}$ is the expected frequency count at level r of variable A and level c of variable B

P-Value, is the probability of observing a sample statistic as extreme as the Chi-square and helps to determine whether the results of the survey are within the normal range of values for the events being observed. The p-value is 0.05, which is a pre-determined amount, and means that survey results have 5% chance of being reproduced in a random sampling process. In other words, as it is unlikely to be produced by a random sampling process. Therefore, it shows a correlation between the change in the experimental variable and the observed effect. In addition, to get the p-value three pieces of information are required:

1. Degree of freedom
2. The alpha level which is 0.05
3. Chi-square distribution table

- Interpret results

After finding an approximate p-value using the Chi-square distribution table, this result should be compared to the significance level in order to reject or fail to reject the hypothesis. It is important to know that the null hypothesis cannot be accepted. If the p-value is less than 0.05, reject the null hypothesis and accept the alternative hypothesis.

Therefore, based on the steps above, an excel tool for testing the relationship between the two variables was created. As the hypothesis is to test whether there is an association between corporate strategy and e-CRM readiness in banks, first it is necessary to place actual counts of the number of strongly disagree (SD), disagree (D), neutral (N), agree (A), and strongly agree (SA) for each variable (strategy and readiness), as shown in Figure 4-17. Based on five columns and two rows the contingency table is 2*5. Also, the totals for each row and column need to be calculated.

Observed Frequencies							
		Column variable					
Row variable		SD	D	N	A	SA	Total
	strategy	4	4	9	301	59	377
	readiness	5	4	10	249	109	377
	Total	9	8	19	550	168	754

Figure 4-17: Observed frequencies

The expected frequencies table was then created for each cell, based on the expected frequency formula which was discussed before:

$E_{r,c}= (n_r * n_c)/ n$

$E_{r,c}$= total in strategy row * total in SD category/ total

$E_{r,c}= 377*9/754$

$E_{r,c}= 4.5$

As can be seen in Figure 4-18, the same calculation was conducted for each cell, and also totals of each column and row were calculated. The Degree of freedom also calculated by (r-1) * (c-1)

Therefore: (2-1) * (5-1) = 4

Expected Frequencies

Row variable	Column variable					
	SD	D	N	A	SA	Total
strategy	4.5	4	9.5	275	84	377
readiness	4.5	4	9.5	275	84	377
Total	9	8	19	550	168	754

Figure 4-18: Expected frequencies

The next stage is to calculate the Chi-square using:

$x^2 = \sum [(O_{r,c} – E_{r,c})^2 / E_{r,c.}$

$x^2 = (4-4.5)^2/ 4.5 = 0.055$

As can be seen in Figure 4-19, the same procedure was conducted to calculate the Chi-square.

Observed	Expected	Chi-square
4	4.5	0.055555556
5	4.5	0.055555556
4	4	0
4	4	0
9	9.5	0.026315789
10	9.5	0.026315789
301	275	2.458181818
249	275	2.458181818
59	84	7.44047619
109	84	7.44047619

Figure 4-19: Chi-square value

Finally, the sum of Chi-square was calculated and, based on the degree of freedom, an approximate p-value from the distribution table was selected. As the p-value is 0.0005 (Figure 4-20), which is less than 0.05, the null hypothesis was rejected, and the alternative hypothesis was accepted. The corporate strategy has an association with eCRM readiness in banks. Researchers can use this tool, instead of using SPSS, for calculating the relationship between two categorical variables.

Data	
Level of Significance	0.05
Number of Rows	2
Level of Columns	5
Degrees of Freedom	4

Results	
Critical Value	9.487729037
Chi-Square Test Statistic	19.96105871
p-Value	0.000508317
Reject the null hypothesis	

Figure 4-20: P-value

4.6 Banks eCRM Readiness

After testing the proposed framework, it is obvious that the corporate strategy, technology, and organisational culture dimensions have the effect on eCRM readiness in the banking industry and they are considered as important and main dimensions for eCRM readiness. In this section, based on the proposed eCRM readiness framework, one of the case study banks was examined in order to assess its eCRM readiness. The other four banks will be assessed later.

In order to assess the eCRM readiness, Melli bank, which is a state bank, was selected. The Friedman test was used to rank the dimensions for this bank. This non-parametric test can help to rank the dimensions based on their importance in the bank regarding employee' perspective on eCRM, which were achieved from the first survey in each bank. Analysing the employee questionnaires from each bank provides a list of factors based on priorities and attention in that particular bank. Finally, the result achieved from the employee perspective analysis provides an overview of eCRM readiness in each particular bank.

The Friedman test is used to determine whether there are any statistically significant differences between the distributions of three or more variables (Pallant, 2011). It is necessary to run a post hoc test to know where any differences lie. This test can be conducted if the Friedman test is statistically significant and, in this study, it helps to rank the eCRM readiness dimensions in Melli bank based on their importance.

Running the Friedman test generated the number of tables and graphs that contain all the information that is necessary to report the results of the Friedman test using SPSS, as seen in Figure 4-21. Therefore, it is necessary, as with another statistical test, to check whether the Friedman test is statistically significant or not.

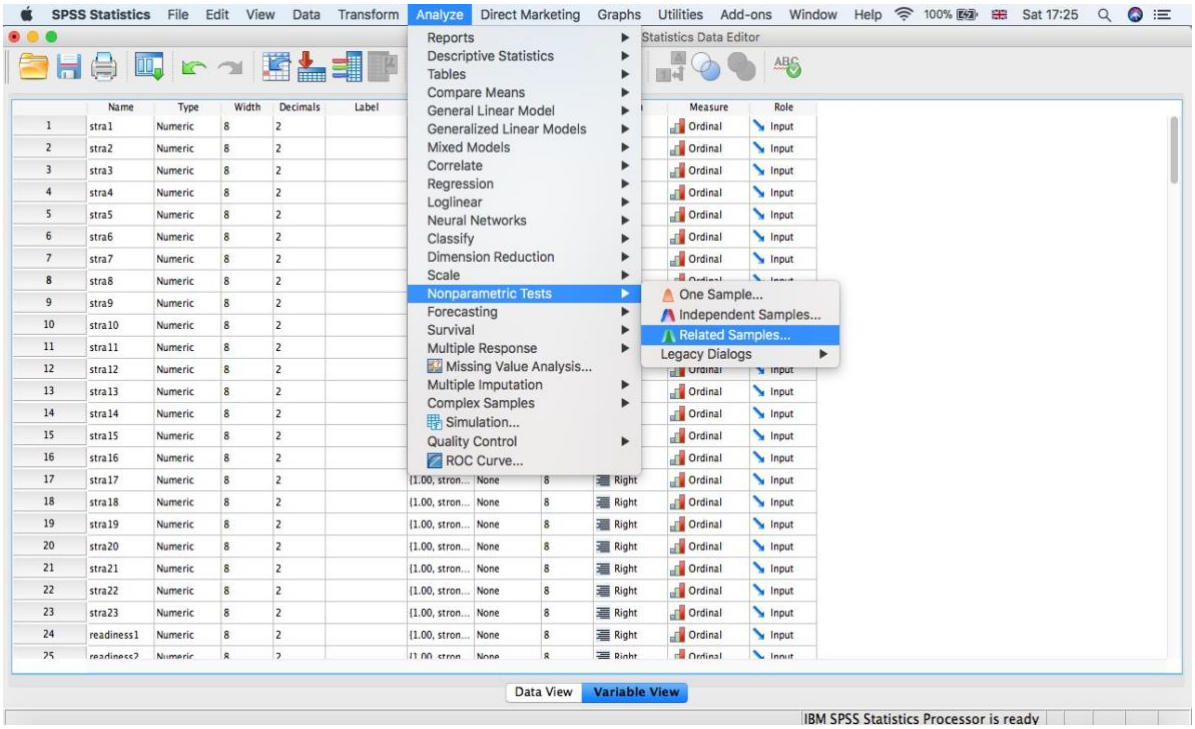


Figure 4-21: Friedman test in SPSS

In order to report the results of the Friedman test, the **Hypothesis Test Summary** table (Figure 4-22) was interpreted. As can be seen, the Friedman test was statistically significant ($p < .05$), therefore the result can be investigated further with the post hoc test.

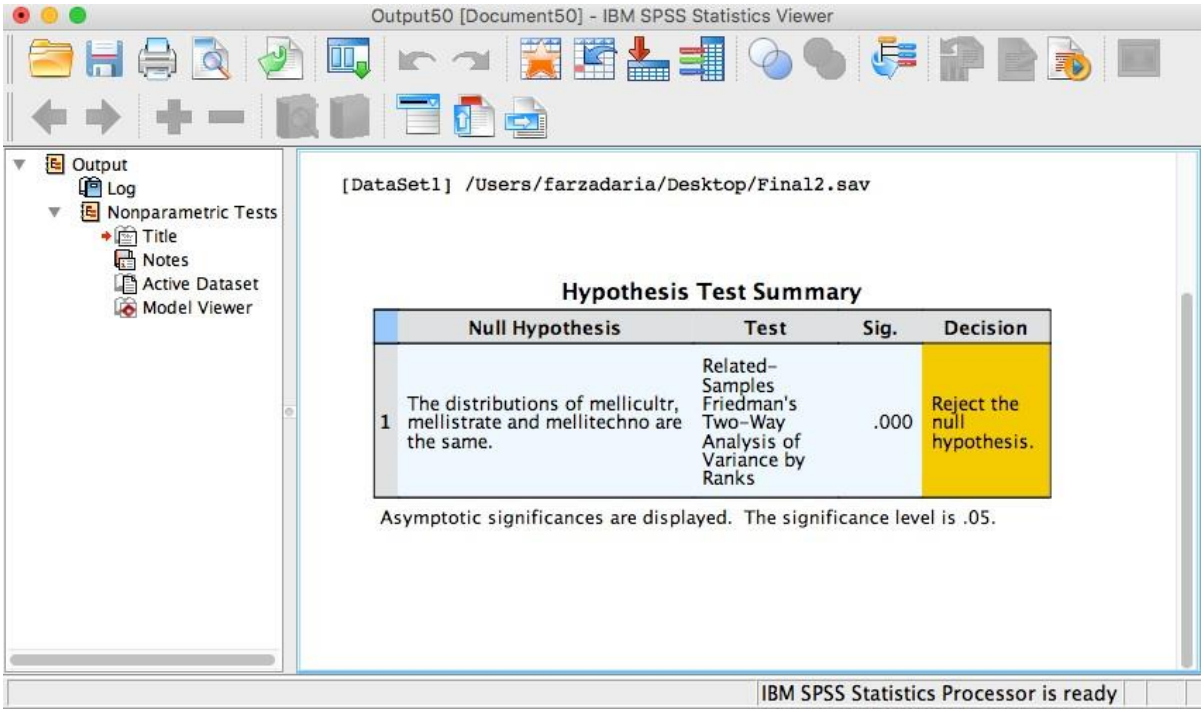


Figure 4-22: Hypothesis test summary

When the Friedman test is statistically significant, there is at least one difference between one of the dimensions. The SPSS ran the pairwise comparisons after confirming the Friedman significances. As can be seen in Figure 4-23, orange denotes a statistically significant pairwise comparison. Pairwise comparisons illustrate that eCRM readiness is statistically significantly different between organisational culture and technology dimensions ($p < 0.05$) and corporate strategy and technology dimensions ($p > 0.05$).

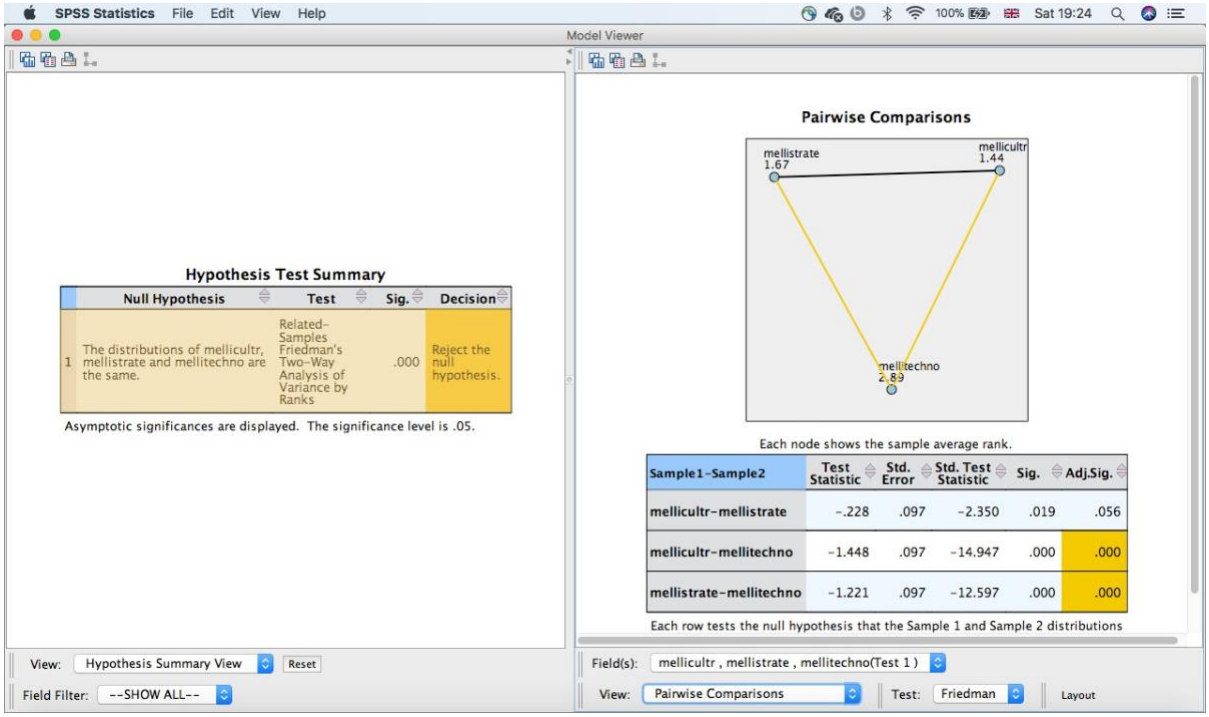


Figure 4-23: Pairwise comparison

This result proves that eCRM readiness in different dimensions can be different. Therefore, each dimension in the bank should be ranked. For this purpose, each dimension was ranked using SPSS, as shown in Figure 4-24. Based on this, results in the Melli bank for technology, organisational culture, and corporate strategy are ranked first, second, and third respectively. Interpreting the result shows the lack of clearly designed eCRM strategies within the bank. This result indicates that technology is an important dimension, but it seems that the technology was not combined with a clear strategy. It is obvious that the dimension with a mean of greater than three can be considered as a good level of readiness, but less and equal to 3 means not ready. Table 4-3 shows that based on the mean of each dimension, the eCRM readiness of Melli bank is at a good level. However, this result does not mean that the eCRM readiness has a good maturity, and so eCRM maturity assessment is crucial.

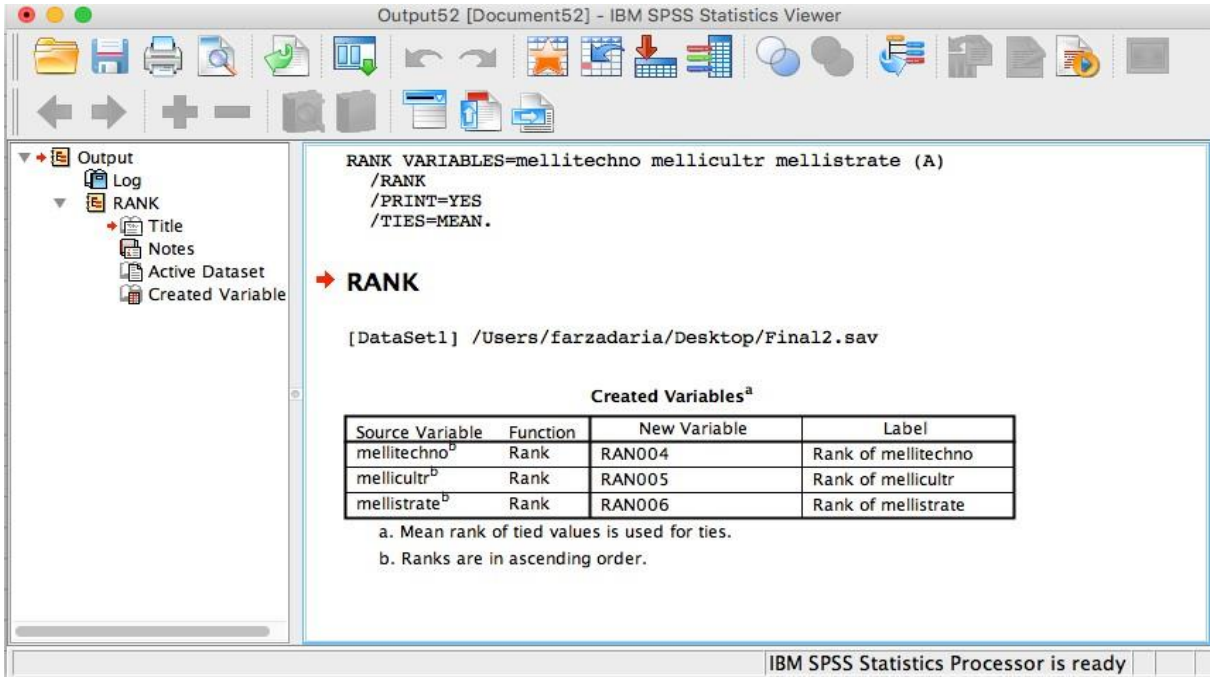


Figure 4-24: Ranks

Table 4-3: Mean

Report			
	mellicultr	mellitechno	mellistrate
Mean	4.1423	4.8991	4.2913
N	214	214	213
Std. Deviation	.30091	.36120	.35044
Median	4.0000	4.9500	4.3043

4.6.1 eCRM Readiness Assessment: Pre-Deployment

Bank Melli was assessed based on the employees' perspective. However, the researcher believes that eCRM readiness can also be assessed based on the decision makers' perspective but before any implementation. In other words, there are two eCRM readiness assessments: pre and post-eCRM readiness assessments.

Pre-eCRM readiness assessment can help the decision makers in banks to simulate their e-CRM readiness status, based on their dimensions and factors preferences. Therefore, an approach was selected to help the researcher to facilitate the process. Furthermore, eCRM readiness of each bank for both pre and post-deployment can be assessed, based on the finding

which confirmed the research hypothesis and proved the viability of the proposed eCRM readiness framework.

An analytical hierarchy process (AHP) is an approach which was chosen for pre-assessment of eCRM in banks. This approach can reveal the status of dimensions and associated factors based on managers' perspectives. The AHP is a structured technique for organising and analysing complex decisions, based on mathematics and psychology, which was developed by Thomas L. Saaty in the 1970s. The design of any AHP hierarchy will not depend only on the nature of the problem at hand, but will also consider the knowledge, judgments, values, opinions, needs, and wants of the participants in the decision-making process. According to Saaty (2008), in order to better understand the AHP hierarchies, it is necessary to consider a decision problem with a goal to be reached, with three alternatives ways of reaching the goal, and four criteria against which the alternatives need to be measured (Figure 4-25).

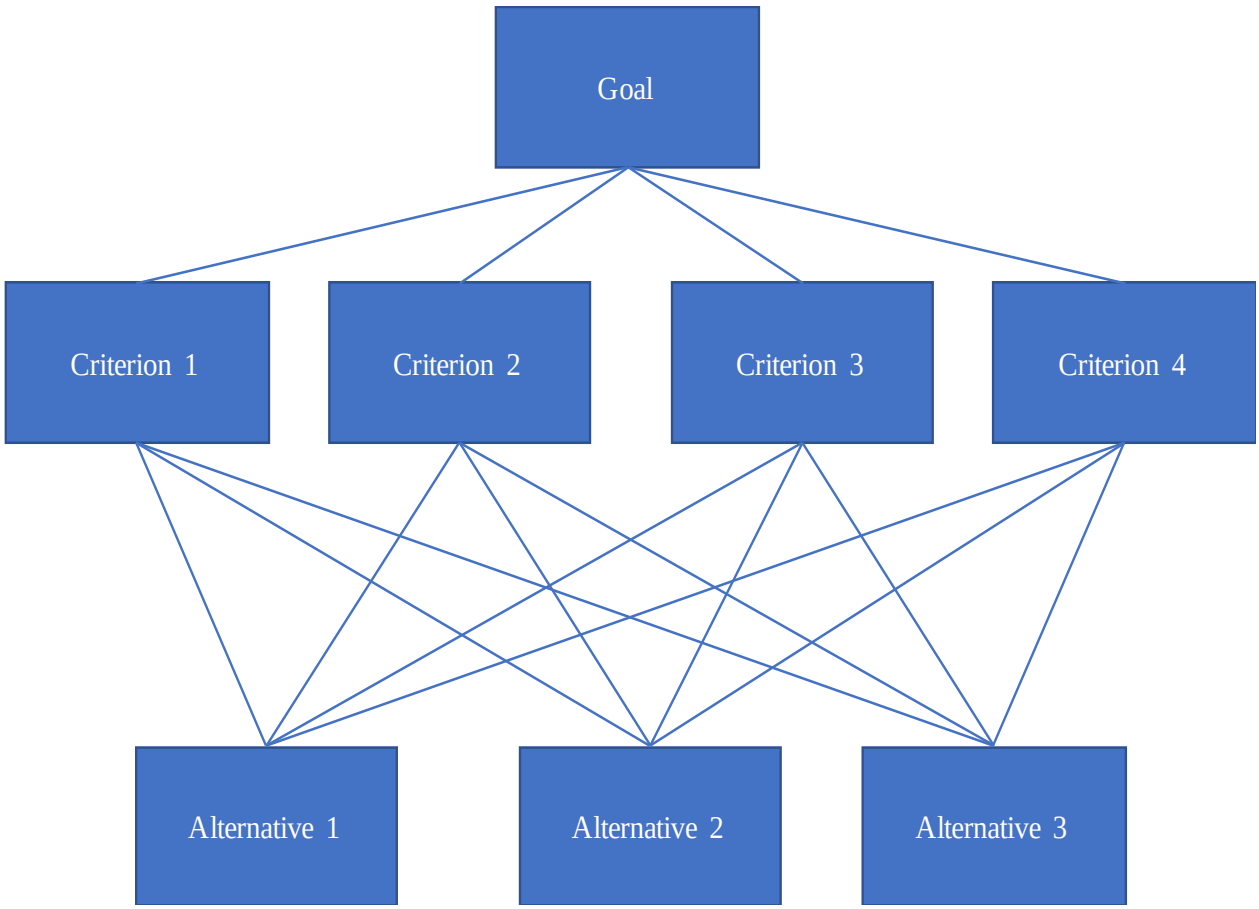


Figure 4-25: Analytical Hierarchy Process

The AHP approach helps to prioritise the eCRM readiness dimensions and factors based on decision-makers' perspectives before any implementation. This simulation provides banks with

valuable information regarding eCRM readiness, such as factors with more and less consideration. This information helps decision makers to find a balance between factors during eCRM implementation and pay attention to factors which have low priority in terms of their perspectives. The real status of eCRM readiness can be measured after eCRM implementation in the bank. The AHP has three different levels: goal level, which is related to the goal of decision maker after the model processing; the criteria level, which is related to criteria and the most important criteria involved in the decision-making process are examined in this level; and finally, the options or alternatives level, which discussed the elements which are selected or graded in order of priority.

For this study, the first level of AHP is ranking the dimensions and factors for eCRM readiness as a goal. In the second level, the research findings from the previous part of this research (main eCRM readiness dimensions) are considered as a criterion, and the third level is the option level. Different people may treat factors differently and assign other importance to a factor. However, people can only make a qualitative judgment for a factor's importance. Humans cannot assign an accurate weight for each factor, especially when there are so many factors to differentiate. It is difficult to quantify how important one is relative to another, and it is only possible to say that one factor is a little more, more, or much important than another. Therefore, using AHP helps to quantify the importance of each dimension and gives a solution to this research by serving as a bridge from qualitative judgment to a quantitative decision.

The next step is to construct a pairwise comparison matrix of factors and compute a quantitative weight of each factor from the matrix, which is a core step. It is easy and accurate to compare importance degree between two factors, while it is difficult and inaccurate to compare importance degree among too many factors (Saaty, 2008). The computation of the different weights is achieved by asking the importance of each attribute with respect to each of the others through pairwise comparison. The next step is based on the computation of a priority vector, and finally, the last step is measuring the consistency of the judgment of the response.

In the first step, the factors of each dimension were compared in terms of their importance within a given category. The factors of all dimensions need to be compared within their dimension (Salmeron and Herrero, 2005). According to Salmeron and Herrero (2005), several ways of making the comparison exist but one of the common ones requires the provision of a rate from the interviewed group. This means regarding the importance of factor A in comparison to the factor B which is from the same dimension, decision-makers need to provide a rate w_{AB}. The reciprocal comparison (rate of the importance of factor B over A) is

ordained from the previous and is given by $1/w_{./.}$ This procedure reduces the number of comparison for the survey to $n\ (n-1)/2$ where n is the number of factors in that dimension. The reason for this procedure is due to the no symmetric inconsistencies.Thus, the importance of factor B over factor A will always be consistent with the importance of factor A over factor B.

For the next step of this research, the AHP nine-point scale, which is widely accepted and suggested by Saaty (2008), was used in order to assign a relative degree of importance between two factors of a dimension, as shown in Table 4-4. As can be seen, in terms of factor B being preferred to factor A, the inverse but analogous scale was used. For example, if the ratio of A_i's importance to A_j is a_{ij} then the importance ratio of A_j's importance to A_i is $a_{ji}=1/a_{ij}$. Thus, if factor B is very strongly to extremely preferred over B, then the importance of factor A over factor B will be rated as 1/8.

Table 4-4: AHP scale (Saaty, 2008)

Scale	Numerical rating	Reciprocal
Extremely importance	9	1/9
Very, very strong	8	1/8
Very strong or demonstrated importance	7	1/7
Strong plus	6	1/6
Strong importance	5	1/5
Moderate plus	4	1/4
Moderate importance	3	1/3
Weak or slight	2	1/2
Equal importance	1	1

In Table 4-5 below, the judgment of the pairwise comparison is arranged in the 5 x 5 square matrix.

Table 4-5: Pairwise comparison matrix

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	1				
Factor 2		1			
Factor 3			1		
Factor 4				1	
Factor 5					1

As can be seen, the value in the diagonal of the table is equal to 1, and this is because of identical Criteria. This value needs to be transferred directly to the pairwise comparision matrix for each dimension. According to Salmeron and Herrero (2005), the matrix for A is:

$A = (a_{ij})$ a_{ij} represents how much criteria i is preferred over criteria j
And
i and j are 1 to n(i,j=1,…, n)

Therefore: $A = \begin{bmatrix} 1 & \dots & aij \\ \dots & 1 & \dots \\ 1/aij & \dots & 1 \end{bmatrix}$

The matrix for each factor of each dimension is different. It means that, based on three main eCRM readiness dimensions, there are four matrices and, in each matrix, a_{ij} is the ratio of the absolute weight relative to the importance of factor i over the absolute weight relative to the importance of factor j, and $1/a_{ij}$ is the inverse of the elements.

The created matrix will help to reflect the importance of one factor compared to another factor in the same dimension, but it should be kept in mind that as the research purpose is to identify the value of the weight of each factor in order to prioritise them better, then in order to get the weights of each factor it is necessary to use the Aw=nw equality where n is the number of factors as the largest eigenvalue of the matrix and w is the vector of the actual absolute weights as the eigenvalue associated with this value, and these weights are called local weights which are within the factors they belong to (Salmeron and Herrero, 2005; Saaty, 2008).

Therefore, borrowing the Salmeron and Herrero (2005) work, in order to find the local weights of each factor the following steps are required for the purpose of this research:

- Create a pairwise comparison matrix for each dimension.
- Fill the matrix based on the designed questionnaire that responds by decision makers of banks.
- Create a normalised matrix which can be calculated by dividing the value of a_{ij} from the pairwise comparison matrix to the sum of the associated column.
- Compute the local weights of each factor by calculating the sum of the factors in the particular row and divide by the number of factors on that row.
- Compute the global weights by multiplying the local weights with dimension and factors.

Therefore, this research has a three-level hierarchy for the eCRM readiness assessment. The first level of the hierarchy is eCRM readiness assessment and the second level is dimension level, which consists of corporate strategy, technology and organisational culture. Finally, the third level of the hierarchy consists of 14 factors which can be prioritised. In the next section, a bank which has not implemented eCRM was used to assess their eCRM readiness before implementation, based on its top manager perspective using AHP. As this bank did not want to be named in this research, it will be referred to as bank X.

4.6.1 eCRM Readiness Assessment of Bank X

In this section, the readiness of eCRM in bank X is discussed. Based on the previous section discussion and the mentioned steps above, the eCRM readiness of bank X was assessed. The pairwise comparison matrix was created and rated by bank X's manager, using the nine-point scale proposed by Saaty (2008). The scale indicates the level of relative importance, from equal to extreme level, by numerical rating from 1 to 9, as shown before. The AHP model can also be applied to assessing any organisation's eCRM readiness before actual deployment.

In order to develop a model for the decision to prioritise the factors, it is necessary to break down the decision into a hierarchy of goals, criteria, and alternatives. The importance of dimensions is then compared pairwise with respect to the goal in order to derive their priorities or their weights. The next stage is to check the consistency of judgments to ensure a reasonable level of consistency. Saaty (2008) proved that for the consistent reciprocal matrix, the largest Eigenvalue is equal to the size of a comparison matrix. Therefore, he introduced a consistency index (CI) as the deviation or degree of consistency which uses the following formula:

$$\mathbf{CI= \lambda_{max}-n/n-1}$$

However, in order to use this index, it needs to be compared with the appropriate one. Therefore, he proposed the random consistency index (RI), based on the size of the pairwise comparison matrix, shown in Table 4-6. The consistency ratio (CR) can be calculated by dividing the consistency index by the consistency random index (RI) using the following formula:

$$CR= CI/RI$$

Table 4-6: Random consistency index

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.21	1.24	1.32	1.41	1.45	1.49

If the consistency ratio (CR) is equal to or less than 10%, the inconsistency is acceptable, but if it is greater than 10%, it is necessary to revise the subjective judgment. Therefore, in order to prioritise eCRM readiness factors, the AHP approach was used in the case of bank X. AHP helps the analyst to organise theoretical aspects of a problem into a hierarchical structure. AHP can reduce complex decisions in banks to a series of eCRM readiness factors comparisons and rankings in which the results can be synthesised. This process not only helps them to arrive at the best decision regarding eCRM implementation but also provides them with a clear rationale for the choices they would like to make.

After building the analytical hierarchy, the next phase was measurement and data collection. The data was collected from the decision maker of bank X, who assigned a number based on a nine-point scale for eCRM readiness factors. Based on their allocation, the pairwise comparison matrix for bank X was created to collect pairwise comparison judgment. Employing the nine-point scale has helped the manager to assign relative scores to the pairwise comparison matrix amongst the dimensions and factors for eCRM readiness. Also, in order to fill the lower triangular matrix, the reciprocal values of the upper diagonal were used. In other words, if a_{ij} is the element of row i column j of the matrix, then the lower diagonal is filled using this formula $a_{ji}=1/a_{ij}$. This process was continued until all levels of the hierarchy were completed, and a series of judgment matrices for the eCRM dimensions and factors were obtained.

In order to construct pairwise comparison matrices, it is necessary to conduct a set of pairwise comparison matrices for each of lower levels attributes. Higher levels elements are governing elements for those in the lower level since they affect it, or it contributes it (Singh, 2013). Table 4-7 shows the pairwise comparison matrix for eCRM readiness dimensions in bank X.

Table 4-7: Pairwise comparison matrix for dimensions

Criterion	Corporate strategy	Organisational culture	Technology
Corporate strategy	1	4	7
Organisational culture	1/4	1	4
Technology	1/7	1/4	1
Total	1.392	5.25	12

From the table above, the pairwise comparison judgment illustrates which dimension dominates another dimension in terms of eCRM readiness. If two dimensions or factors being compared are equal, then one is assigned to both positions, as in the comparison between corporate strategy and corporate strategy. If one dimension dominates another one, then the whole number integer is entered from the nine-point scale, and automatically the reciprocal is entered in the related row/column. For example, the result shows that corporate strategy dimension dominates the technology dimension and the manager believes that the corporate strategy dimension is much more important than the technology dimension. Therefore, after inserting number 7 in the correct row, the reciprocal (1/7) will be automatically inserted into the technology row, corporate strategy column as there are n (n-1)/2 judgments required to develop the matrix. From the pairwise matrix for bank X, it is evident that the corporate strategy dimension (criterion) is the most influential among other dimensions. For example, organisational culture is preferred to technology by the value of 4, meaning that organisational culture is moderate plus important than technology dimension.

After completing the comparison matrices, the next step is to normalise the matrix. In order to do this, the total of the numbers in each column was used. The normalised matrix illustrates the weighting of elements. In order to yield the normalised scores, the value of each cell was divided by the sum of each column in pairwise matrices. Finally, the values in each row

were added and this sum was divided by the number of elements in the row in order to find the average or local weights. Table 4-8 shown the results of local weights for dimensions. Accordingly, the local weights for factors were calculated.

Table 4-8: Normalised matrix for dimensions

Criterion	Corporate strategy	Organisational culture	Technology	Priority Vector (P.V.)
Corporate strategy	0.717	0.761	0.583	0.687
Organisational culture	0.179	0.190	0.333	0.234
Technology	0.102	0.047	0.083	0.077
Total	1	1	1	1

The table above illustrates that the priority vector (P.V.) of each dimension was achieved by dividing the total sum of the values of the same row by the number of dimensions (n). Based on the table, the corporate strategy has the highest score among other dimensions, with a value of 0.687, and organisational culture and technology dimensions with scores of 0.234 and 0.077 were second and lowest respectively.

After normalising the matrix and finding the P.V. (local weights) for each dimension, the next step is to calculate the consistency ratio and check its value. The purpose of calculating the degree of consistency is to validate the results and make sure that the original preference rating was consistent. According to Singh (2013), people are often inconsistent when answering questions and, therefore, one of the important tasks of the analytical hierarchy process is to calculate the consistency level of the estimated vector. As mentioned before, the consistency ratio helps to measure the consistency in the pairwise comparison matrix; hence the CR was calculated.

Calculating the consistency ratio (CR), as an essential feature of the AHP, helps to determine the acceptance of the priority weighting and also eliminate the possible inconsistency revealed in the dimensions and factor weights through the computation of consistency level of each matrix. Song and Kang (2016) suggest that the CR result is reliable only when the value is 0.1 or less. Therefore, if the value of CR is higher than this value, it means the result of a matrix is inconsistent and not valid.

There are six steps for calculating the consistency ratio (Singh, 2013), as follows:

- Let the pairwise comparison matrix and principal matrix be denoted as M1 and M2
- M3 is equal to M1 multiply by M2 (M3=M1*M2)
- Then M4 is equal M3 divide by M2 (M4=M3/M2)
- Calculate the average of the values of M4 (λ_{max}
- Calculate the consistency index (CI) which can be obtained by (λ_{max}-N) / (N-1)
- Calculate the consistency ration (CR) which can be obtained by dividing the CI by RCI (RI) corresponding to N (number of dimensions and factors in this study)

Based on the above steps the consistency ratio (CR) was as follows:

$$M1= \begin{bmatrix} 1 & 4 & 7 \\ 1/4 & 1 & 4 \\ 1/7 & 1/4 & 1 \end{bmatrix} \qquad M2= \begin{bmatrix} 0.687 \\ 0.234 \\ 0.077 \end{bmatrix}$$

$$M3= 0.687 \begin{bmatrix} 1 \\ 1/4 \\ 1/7 \end{bmatrix} + 0.234 \begin{bmatrix} 4 \\ 1 \\ 1/4 \end{bmatrix} + 0.077 \begin{bmatrix} 7 \\ 4 \\ 1 \end{bmatrix}$$

$$M3= \begin{bmatrix} 2.170 \\ 0.717 \\ 0.234 \end{bmatrix} \qquad M4= \begin{bmatrix} 3.155 \\ 3.061 \\ 3.015 \end{bmatrix}$$

λ_{max}= average of the M4 then λ_{max}= 3.155 + 3.061 + 3.015 / 3 = 3.077

According to consistency index (CI) = (λ_{max}-N)/ (N-1)

Then CI= (3.077- 3) / (3 – 1) = 0.0385

In order to find the CR, the CI was divided by RCI, which can be identified from the random consistency ratio table. Based on this table for a matrix size of 3, the random consistency is 0.58, therefore,

CR= CI/RCI= 0.0385 / 0.58 = 0.0663

The result of CR= 0.0663 (6.63%) illustrates that the value is less than 0.1 (10%). Therefore, the judgment is acceptable.

As the identified dimensions for eCRM readiness have their own factors (sub-criteria), the new matrices for each dimension's factors were created, and again the consistency ratio of each matrix was calculated based on the previously mentioned steps. Local weights of each factor are used to compute the global weights of each dimension, which enables assessing eCRM readiness in the bank X. Table 4-9 shows the pairwise comparison matrix for the factors of technology dimension:

Table 4-9: Pairwise comparison matrix for technology dimension

Sub-criteria	Infrastructure	Knowledge management	Number of channels	Integration between channels	Human resources	Local weight
Infrastructure	1	2	3	4	5	0.397
Knowledge management	1/2	1	4	4	4	0.308
Number of channels	1/3	1/4	1	3	2	0.141
Integration between channels	1/4	1/4	1/3	1	2	0.087
Human resources	1/5	1/4	½	1/2	1	0.064
Total	2.28	3.73	8.83	12.5	14	

The consistency of technology factors was calculated as follows:

$$M1=\begin{bmatrix} 1 & 2 & 3 & 4 & 5 \\ 1/2 & 1 & 4 & 4 & 4 \\ 1/3 & 1/4 & 1 & 3 & 2 \\ 1/4 & 1/4 & 1/2 & 1/2 & 1 \\ 1/5 & 1/4 & 1/2 & 1/4 & 1 \end{bmatrix} \qquad M2=\begin{bmatrix} 0.397 \\ 0.308 \\ 0.141 \\ 0.087 \\ 0.064 \end{bmatrix}$$

$$M3= M1 * M2 \quad \Rightarrow \quad M3=\begin{bmatrix} 2.112 \\ 1.681 \\ 0.742 \\ 0.440 \\ 0.335 \end{bmatrix}$$

$$M4= M3/M2 \quad \Rightarrow \quad M4=\begin{bmatrix} 5.312 \\ 5.445 \\ 5.238 \\ 5.038 \\ 5.208 \end{bmatrix}$$

λ_{max}= average of the elements of M4 then λ_{max}= 5.248

now consistency index (CI)= (λ_{max}-N)/N-1
CI= (5.248-5) / 4 = 0.0621

Consistency ratio (CR)= CI/RCI where RCI for the n=5 is 1.21
CR= 0.0621/1.21 = 5.132 which is less than 10%. Therefore, it is consistent.

For the organisational culture factors, the normalised matrix and consistency are as follows (Table 4-12):

Table 4-10: Normalised matrix for technology dimension

criterion	Awareness	Resistance	Skills	Training	Top management commitment	P.V.
Awareness	1	2	4	5	5	0.46+0.5+0.5+0.4+0.35/5
Resistance	1/2	1	2	4	4	0.23+0.25+0.25+0.32+0.28/5
Skills	1/4	1/2	1	2	2	0.11+0.12+0.12+0.16+0.14/5
Training	1/5	1/4	1/2	1	2	0.09+0.06+0.06+0.08+0.14/5
Top management commitment	1/5	1/4	1/2	1/2	1	0.09+0.06+0.06+0.04+0.07/5
Sum	2.15	4	8	12.5	14	

$$M1=\begin{bmatrix} 1 & 2 & 4 & 5 & 5 \\ 1/2 & 1 & 2 & 4 & 4 \\ 1/4 & 1/2 & 1 & 2 & 2 \\ 1/5 & 1/4 & 1/2 & 1 & 2 \\ 1/5 & 1/4 & 1/2 & 1/2 & 1 \end{bmatrix} \qquad M2=\begin{bmatrix} 0.444 \\ 0.267 \\ 0.133 \\ 0.088 \\ 0.065 \end{bmatrix}$$

$$M3=\begin{bmatrix} 2.285 \\ 1.373 \\ 0.686 \\ 0.442 \\ 0.332 \end{bmatrix} \qquad M4=\begin{bmatrix} 5.142 \\ 5.132 \\ 5.132 \\ 5.020 \\ 5.049 \end{bmatrix}$$

CI= (5.0095-5)/4= 0.023

Then CR= 0.023/1.21= 0.019 which is less than 0.1. Therefore, it is consistent.

Finally, for the corporate strategy factors, the normalised matrix and consistency are as follows (Table 4-11):

Table 4-11: Pairwise comparison matrix for corporate strategy dimesion

criterion	Strategy	Plan	Goals	IT policy	P.V.
Strategy	1	1	½	2	0.220
Plan	1	1	2	5	0.379
Goals	2	1/2	1	5	0.321
IT policy	1/2	1/5	1/5	1	0.079
Sum	4.5	2.7	3.7	12	

M3= $\begin{bmatrix} 0.220 \\ 0.379 \\ 0.321 \\ 0.079 \end{bmatrix}$ M4= $\begin{bmatrix} 0.918 \\ 1.637 \\ 1.346 \\ 0.329 \end{bmatrix}$ CI= (4.210-4)/3= 0.070

CR= 0.070/0.9= 0.078 which is less than 10%. Therefore, it is consistent.

The results show that the consistency ratios of all matrices are consistent. After consistency check and ensuring that the decisions of bank X's manager, the decisions are ready for further analysis, which is prioritising the eCRM readiness factors in bank X. As can be seen in Table 4-12 the local weight of eCRM readiness dimensions and associated factors were calculated.

This process is calculated based on priority vectors and global weights. The global weight of each factor can be measured by multiplying local weight of dimension by its local weight (Singh, 2013). The reason is that the dimension in the higher level in AHP is the governing element for factors in the lower level since it affects it or contributes to it. Therefore, the factors in the lower level can be compared to each other, based on their effect on the dimension or, in other words, the governing element. Therefore, the developed AHP hierarchy will help to prioritise the dimensions (criteria) and factors (sub-criteria), which is important for assessing eCRM readiness in a bank or any organisation, providing a comprehensive view of an organisation to decision makers in terms of eCRM readiness important factors before any deployment.

Table 4-12: Local and global weights

Dimension	Local weight	Factors	Local weight	Global weight
Corporate strategy	0.687	strategy	0.220	0.151
		plan	0.379	0.260
		goals	0.321	0.220
		IT policy	0.079	0.054
Organisational culture	0.234	awareness	0.444	0.103
		resistance	0.267	0.062
		skills	0.133	0.031
		training	0.088	0.020
		management support	0.065	0.015
Technology	0.077	infrastructure	0.397	0.030
		knowledge management	0.308	0.023

		management support	0.065	0.015
Technology	0.077	infrastructure	0.397	0.030
		knowledge management	0.308	0.023
		number of channels	0.141	0.010
		integration between channels	0.087	0.006
		human resources	0.064	0.004

The result in the table above shows that goals (0.260), IT policy (0.220) and strategy (0.151) are perceived to be the most important factors for eCRM readiness in bank X. This implies the good understanding by the manager of the importance of the bank's strategy for eCRM readiness success. The result also illustrates that organisational culture factors that are important for the success of eCRM have the lowest rank; for example, top management support, which is crucial for eCRM success, has a value of 0.005. Unfortunately, it shows inadequate support from top management, which will fail eCRM deployment. Top management support is considered to enhance the perception and understanding of eCRM deployment among its users in the bank and thus stimulates better outcomes. Managers need to express enthusiasm and demonstrate a genuine interest in eCRM

implementation. Therefore, it can be concluded that allocating the resources for eCRM deployment is a top management responsibility and managers need to open communications with their team so that they improve employees' perceptions and bring motivation and mutual trust. Finally, top management should give the maximum focus for active strategy development, which will facilitate other decisions related to resource allocation for the application of technology tools. In addition, as the proposed approach does not provide guidance on an appropriate action plan to address deficiencies, it would be better to discuss the result with experts before any implementation in the bank X.

4.6.2 eCRM Readiness Assessment: During Deployment

After proposing an approach for assessing eCRM readiness before implementation, it can be seen that there is a gap for assessing e-CRM readiness during deployment. In other words, bank decision makers need to figure out how ready they are during deployment of eCRM. This assessment helps banks to determine their eCRM readiness during implementation. The researcher believes that this can be achieved by creating a Likert-scale questionnaire for eCRM readiness dimensions, along with their factors for banks and compare the result of this questionnaire for each bank with the result of the global index. The global index shows the perspectives of eCRM experts, based on each eCRM readiness dimension and factor. This index can then be compared to the decision maker perspective on each dimension or factor (current index).

As discussed before, the readiness of eCRM in one of the case studies banks (Melli bank) was assessed, and an approach for assessing e-CRM readiness before any deployment was proposed. It can be concluded that there are three stages of eCRM readiness assessment. First, pre-assessment, which is based on the AHP approach and helps the bank to evaluate eCRM deployment based on managers' decisions. The outcome of this evaluation provides knowledge about strengths and weaknesses. The second assessment stages are during the assessment, which can provide the current level of eCRM readiness. This level can be recognised based on the given global index. Finally, the third stage of assessment is post-eCRM readiness assessment. This assessment is called maturity assessment and will be discussed in the next section.

4.7 eCRM Maturity Assessment

After discussing the assessment of eCRM readiness before and during deployment, it is

necessary to evaluate eCRM readiness after deployment (eCRM maturity). As mentioned before, eCRM maturity is the maturity of eCRM readiness factors after implementation. Therefore, eCRM readiness dimensions and factors can be considered even for assessing maturity. But constructing the maturity model based on just identified readiness factors is not as efficient as there are additional factors that can impact on maturity. It is obvious that some other factors also affect eCRM success in banks, so it is necessary to confirm these factors before adding to the research eCRM maturity model.

Unfortunately, unlike the readiness factors, identifying the new maturity factors by surveying stakeholders (employees and managers) is not possible as eCRM is a new concept in Iranian banks and maturity needs several years of development. For example, social eCRM is an essential factor for the success of eCRM, and this factor has a strong relationship with eCRM maturity. Despite the existence of this factor in the existing literature, it is better to confirm this factor to employ it in the maturity model and accordingly for assessing maturity. However, as there is no evidence of the existence of social eCRM in Iranian banks this dimension and its associated factors cannot be confirmed. Therefore, the proposed maturity model without this crucial factor will lose efficiency. To solve this issue, the researcher decided to conduct a study at Middlesex University London to prove these critical factors for evaluating eCRM maturity in Iranian banks. Middlesex University has bee chosen because of its eCRM capabilities and support. In addition, these factors could be used in the maturity model without conducting the second study, but this result can provide a strong justification to include the newly identified factors into the maturity model and accordingly in the assessment tool for banks. In other words, testing these factors in the different organisation give the confidence to use them for assessing banks maturity.

Furthermore, Middlesex University was chosen because a convenience sampling could be used there. This technique is a type of sampling method that relies on data collection from population members who are conveniently available to participate in the study. This study was conducted with a number of student groups, who developed and maintained Facebook pages with the purpose of eCRM support for higher education institutions. The study involved students who were based in the London campus of Middlesex University. In total, 41 students were organised in 10 groups and were assigned the task of creating and maintaining a university page on Facebook. They were responsible for providing continuous information feeds for potential customers, who ranged from existing students and prospective students to alumni and parents. They were issued with the questionnaire (Table 4.13) to be used for thorough evaluation of

pages.

They first had to identify their core eCRM goals and objectives and determine how their strategy was implemented. Next, they had to review all Facebook pages and rank them in assessing the deployment of eCRM support. They also had to reflect on the use of various Facebook features for eCRM support and how each feature fostered and enhanced customer relations.

The scope of the study was to investigate the role of Web 2.0 technologies in supporting user interaction and collaboration, as well as opportunities for further engagement. With the worldwide explosion of social media usage, businesses are feeling extreme pressure to engage with their attentive customers, and there is an excellent potential for them to get closer to their customers using the channel of Electronic Customer Relationship Management, which is called Social eCRM (SECRM). The analysis of students' responses from these questionnaires provides additional information on the role of social media on eCRM success. Therefore, these new factors can be used to assess eCRM maturity in banks.

The conceptual framework for this study was based on four dimensions: social eCRM (SECRM), customer relationship performance (CRP), eCRM maturity (ECM), and eCRM analytics (ECA). The methodology of all the constructs in the conceptual framework was based on the literature as discussed earlier. In order to measure the scales, the questionnaire was developed by researchers. If a previously validated instrument is available, it is better to use it rather than develop a new one just for the reason of efficiency. For customer relationship performance (CRP) and SECRM scales, the developed items were adopted and modified from Wongsansukcharoen et al. (2015). For eCRM maturity, the items were derived from Sohrabi et al. (2010). Finally, the scale for eCRM analytics was developed by the researcher.

All items were five-point Likert scales (strongly disagree to strongly agree) and the data obtained were analysed using structural equation modelling. Structural equation modelling (or SEM) is a powerful technique that can combine complex path models with factors (latent variables) and help researchers determine confirmatory factor analysis models, regression models, and complex path models. SEM can use various types of models to describe relationships among observed variables, with the same basic goal of providing a quantitative test of a theoretical model that hypothesised by the researcher. Therefore, SEM can test various theoretical models that hypothesised and illustrates how sets of variables define constructs and how these constructs are related to each other. Therefore, as the SEM goal is to determine the extent to which sample data support the theoretical model, the SEM was used to test the

framework using hypothesis testing to advance the understanding of the relationship among constructs.

SEM techniques are becoming the preferred method for confirming theoretical models. One of the SEM software programs is AMOS, which was used in this research. As mentioned before, there are two types of factor analysis; exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). When there is an unknown link between the observed variable and the latent construct, the EFA is used, and when the researcher has some knowledge of the variables, the CFA is used (Byrne, 2016). Therefore, as there is some knowledge based on the literature about variables, the relations between variables can be postulated and then the hypothesised structure can be tested. As the CFA only focuses on the link between variables and not on the inter-factor relations, within the SEM framework it represents a measurement model (Byrne, 2016), which will be discussed later.

According to Anderson and Wolf et al. (2013), in order to test a structural equation modelling using AMOS, a minimum sample size of 30 is recommended. As the population of this study is the business information systems first-year students at Middlesex University in London campuses, the sample size was selected using purposive (deliberate) sampling. The created questionnaire was used as a tool for this research, including four variables: SECRM, CRP, ECM, and ECA. Figure 4-26 shows the conceptual framework for this study, which provides the foundation on which entire research is based:

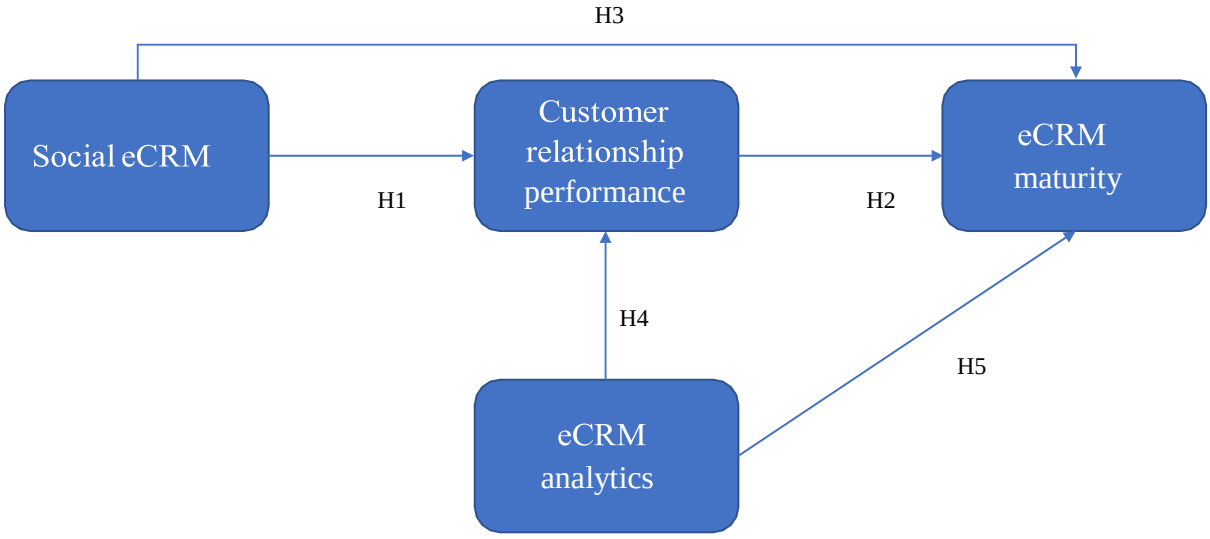


Figure 4-26: The conceptual framework for social eCRM

Based on the conceptual framework the hypotheses are:

H_1: Social eCRM has an impact on customer relationship performance.

H_2: Customer relationship performance has an impact on eCRM maturity.
H_3: Social eCRM has an impact on eCRM maturity.
H_4: eCRM analytics has an impact on customer relationship performance.
H_5: eCRM analytics has an impact on eCRM maturity.

The above framework provides a clear understanding of the dynamics of the problem being investigated and therefore facilitates the creation of hypotheses for the test. The research approach was the quantitative approach with case study method and the questionnaire method for data collection. The research model, variables, and questions were developed based on those defined by previous literature. As mentioned, the sample size was students from the first year of Business Information Systems (BIS) programme, and the data were obtained by distributing questionnaires based on created Facebook pages. According to Wolf et al. (2013), the range of the sample size requirements for SEM is 30 to 460 cases. Finally, in order to test the hypotheses and confirm the new factors which can be used in the maturity assessment model, it is necessary to select the appropriate statistical techniques. Therefore, the following tests were used:

4.7.1 Confirmatory Factors Analysis (CFA)

Confirmatory factor analysis (CFA) as a special form of factor analysis, is a multivariate statistical procedure that is used to find out how well the measured variables represent the number of constructs. Another type of factor analysis is exploratory factor analysis (EFA), but there are differences between them. In the EFA, all measured variables are related to every latent variable and data is explored merely. Based on data, the factors are identified, and information regarding the required number of factors is provided in order to represent the data. CFA analysis is used to test whether measures of a construct are consistent with a researcher's understanding of the nature of that construct or factor and the researcher can specify the number of required factors in the data. According to Fox (2010), CFA as a tool helps the researcher to test the hypotheses that a relationship between the observed variables and their underlying latent constructs exists.

As the nature of this research is to test the above hypotheses, CFA was used as a first step to assess the proposed measurement model in a structural equation model. CFA is a special case of the structural equation modelling (SEM) and has two components. The first component is a measurement model which links a set of observed variables to a usually smaller set of latent variables and the second component is a structural model which links the latent variables through a series of recursive and non-recursive relationships. In addition, structural equation

modelling software can be used for performing the confirmatory factor analysis and in this research AMOS 21 software was used.

Based on Truxillo's (2003) approach, processes for the confirmatory factor analysis for this study use the following steps:

1- Review the literature and relevant theory to define the social eCRM constructs, customer relationship performance constructs, customer satisfaction constructs, e-CRM maturity constructs, and eCRM analytics constructs. In other words, to support the model specification.
2- Specify a model, as shown in the figure, to develop the overall measurement model theory.
3- Collect data to produce the empirical results.
4- Measurement model validity assessment.
5- Present and interpret the findings.

In addition, in order to assess the measurement model validity, the goodness of fit statistics, such as GNI, BIC, RMSEA, RMR, and NFI, can be used to check the model fit. The evaluation of the measurement model for goodness-of-fit helps to indicate how well the specified model reproduced the covariance matrix among the indicator items (Sivaraks et al., 2011). How the model that represents the data reflects the underlying theory (model fit) is an issue by no means agreed; hence, there is an abundance of fit indices for the researchers which can lead them to feel overwhelmed. A guideline can be helpful to prevent any conflict arising from the collection of indices, and ultimately these measures provide the most fundamental indication of how well the proposed theory fits the data (Hooper et al., 2008).

The Chi-square goodness of fit test is one of the measures for model fit evaluation. This measure is used when there is an attempt to fit a statistical model to observed data in order to determine how well the model reflects the data. In other words, how close the observed values are to those who would be expected under the fitted model. However, the Chi-square test is often referred to for lack of fit or badness of fit (Kline, 2015). Therefore, alternative measures of fit can be used.

A number of criteria were employed in order to assess the model fit. According to Byrne (2016), if both the Non-Normed Fit Index (NNFI) and Comparative Fit Index (CFI) reach the value over 0.90, it can be shown as an acceptable fit. In addition, a value over 0.95 indicates close fit, and near to 1.00 indicates exact model fit. It is also recommended that smaller values

of the Standardised Root Mean Square Residual (SRMR) can prove better. Another index for fit is the Root Mean Square Error of Approximation (RMSEA). For this index fit, if the value is from 0.10 to 0.80, 0.08 to 0.06, and from 0.06 to 0.00, then it can be considered as a mediocre, acceptable, and close and exact fit respectively (Browne and Cudeck, 1993). According to Bollen (1989), the acceptable model fit can be found if the division of Chi-square by its degree of freedom generates a value below 2.0. Also, Bozdogan (1987) argues that in order to determine the best fitting model, the Consistent Akaike's Information Criterion (CAIC) and Akaike Information Criterion (AIC) need to be used due to their potential to demonstrate the best models out of tested models.

Therefore, it is necessary to test the measurement model of each dimension and examine the goodness of fit indices in order to determine the fit of each model. In cases of failing the model for fit, the model will be re-specified regarding either building the model empirically and theoretically or trimming. However, building or trimming the model should not be considered if empirically deleting or adding a path to the model is not supported by a theoretical basis (Meyer et al., 2006; Kline, 2015).

In addition, for conducting the confirmatory factor analysis (CFA), the AMOS 21 was conducted. The AMOS 21 enables the researcher to specify, estimate, assess, and present models to show hypothesised relationships among variables. This software helps to build models more accurately than with standard multivariate statistics techniques. This software provides structural equation modelling (SEM), which includes a diverse set of mathematical models, computer algorithms, and statistical methods that fit networks of constructs to data (Kaplan, 2009).

4.7.2 Structure Equation Modelling

As in the conceptual framework, testing the impact of independent variables on dependent variables is vital, and so the multiple regression test is suitable. Structural equation modelling (SEM) is a multivariate statistical analysis technique used to analyse structural relationships. It as a tool that can help to analyse the structural relationship between latent constructs and measured variables. Structural equation modelling as a multivariate method to assess the reliability and validity of the model measures and is more powerful than first generation multivariate methods. According to Alavifar et al. (2012), SEM helps the researcher in the measurement of direct and indirect effects and performing test models with multiple dependent variables, as well as the use of several regression equations simultaneously. Therefore, SEM

as a second-generation method was used in this research due to capabilities such as flexible assumptions, measurement error reduction by using CFA, attractive interface and more visual, testing total model rather than individual coefficient, and ability to manage some problematic data. In the next section the measurement model will be tested and, in order to determine the fit of the model, the goodness of fit indices will be examined. It is important to know that if the model failed to fit the data so that modification indices can be investigated to determine the source of the misfit. Finally, the re-specified model will be tested again.

4.7.2.1 The Measurement Model

In order to test the construct validity of the survey instrument against the sample data, the measurement model was evaluated (Byrne, 2016). Different items measured each factor. 12 items measured the factor of social eCRM, eCRM maturity, eCRM analytics, and customer relationship performance were measured by 12 items. Table 4-13 illustrates the distribution of the items across the four factors including factor loadings of each item, which is a relationship of each variable to the underlying factor.

Table 4-13: Factor loading

Factor	Question	Factor loading
Social eCRM	I have a clear strategy for my social eCRM	0.73
	My university Facebook's page helps to acquire customers	0.81
	My university Facebook's page helps to engage with customers	0.86
Customer relationship performance	Our customers work with us for a long time	0.78
	Once we get new customers, they tend to stay with us	0.92
	Our customers are satisfied with our university	0.83
eCRM maturity	We have clear strategy for our eCRM such as planning to listen and learn	0.94
	We have sufficient knowledge about Facebook features	0.90
	Customer information is important for future relationship	0.77
eCRM analytics	We frequently measure customers' engagement levels	0.74
	We are aware of the importance of customer feedback	0.82
	We analyse the data obtained from customers in order to fulfil their requirements	0.95

As mentioned, the underlying constructs comprise social eCRM, customer relationship

performance, eCRM maturity, and eCRM analytics. The adopted scale items from the relevant studies (with reliable and valid measures) helped to develop a scale item which was used to measure the constructs in the research model. These factors were assessed using a five-point Likert scale, which was selected for this study due to the easy construct and administration, and also it takes less time because the scale is easy to understand for respondents. In addition, the validity and reliability of the scale were examined in order to confirm the acceptance of scale.

A scale with a total of 12 items was used to assess the above factors in the basis of a five-point Likert scale, ranging from strongly disagree to strongly agree. All questionnaires were distributed among students in order to collect data. A questionnaire is a reformulated written set of questions which helps the researcher to record respondents' answers in order to gather empirical data from the large samples (Sekaran and Bougie, 2013). Also, this effective method saves cost, time and effort. Furthermore, the pre-test was conducted as a trial run with a group of students to monitor the problems in design or instruction of a questionnaire. The benefit of the pre-test is to check whether the respondents understand the questions in terms of language and structure and to check whether the required information is collectable from the research instrument. As the students meet the specific needs of the research study, the purposive sampling was selected, which involves selecting confident respondents for participation. Before the data collection procedure, consent forms were distributed and signed by participants.

As can be seen in Figure 4-27 and Figure 4-28, variables were named as secrm1, secrm2, secrm3, crp1, crp2, crp3, ecm1, ecm2, ecm3, eca1, eca2, and eca3. Each variable was measured based on the questions as follows:

secrm1

Q1: I have a clear strategy for my social eCRM

secrm2

Q2: My university Facebook's page helps to acquire customers

secrm3

Q3: My university Facebook's page helps to engage with customers

crp1

Q4: Our customers work with us for a long time

crp2

Q5: Once we get new customers, they tend to stay with us

crp3

Q6: Our customers are satisfied with our university

ecm1

Q7: We have clear strategy for our eCRM such as planning to listen and learn

ecm2

Q8: We have sufficient knowledge about Facebook features

ecm3

Q9: Customer information is important for future relationship

eca1

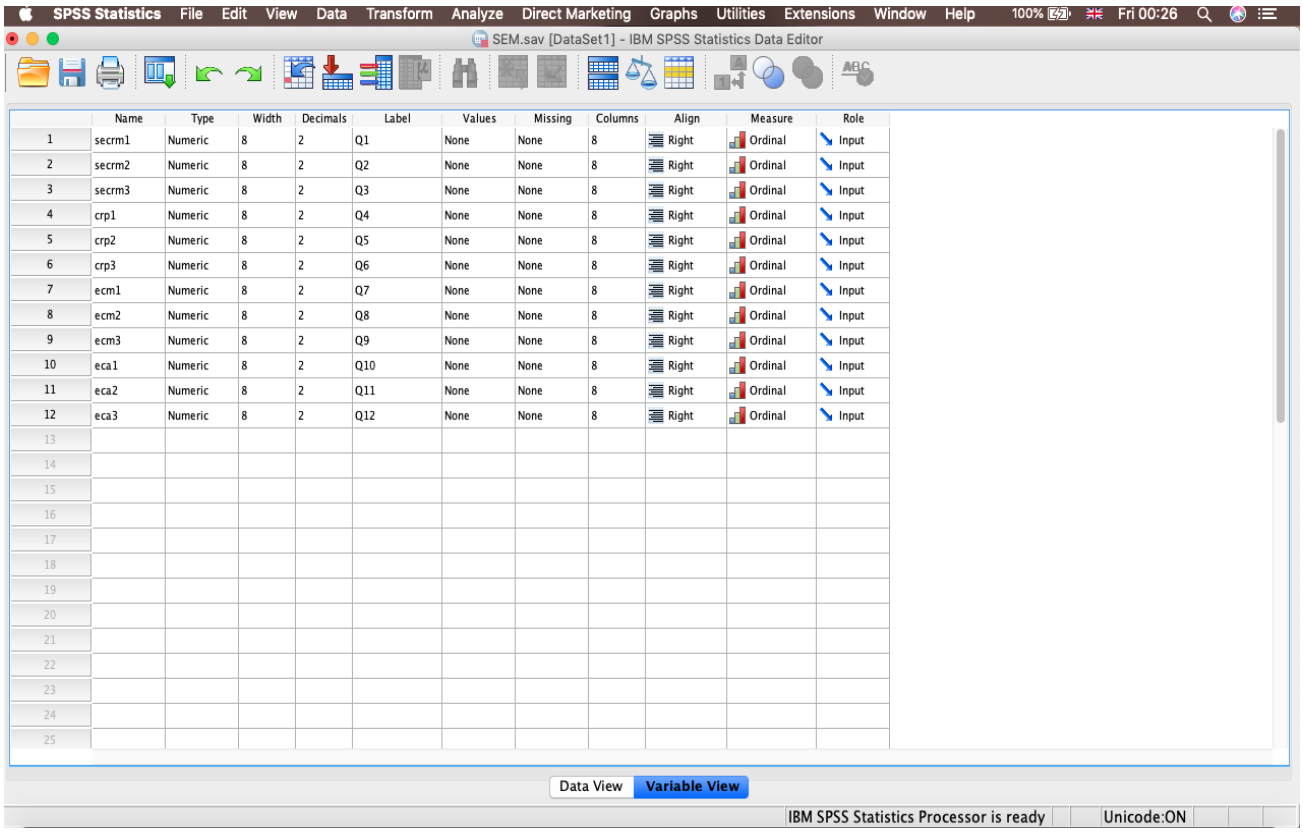
Q10: We frequently measure customers' engagement levels

eca2

Q11: We are aware of the importance of customer feedback

eca3

Q12: We analyse the data obtained from customers in order to fulfil their requirments



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	secrm1	Numeric	8	2	Q1	None	None	8	Right	Ordinal	Input
2	secrm2	Numeric	8	2	Q2	None	None	8	Right	Ordinal	Input
3	secrm3	Numeric	8	2	Q3	None	None	8	Right	Ordinal	Input
4	crp1	Numeric	8	2	Q4	None	None	8	Right	Ordinal	Input
5	crp2	Numeric	8	2	Q5	None	None	8	Right	Ordinal	Input
6	crp3	Numeric	8	2	Q6	None	None	8	Right	Ordinal	Input
7	ecm1	Numeric	8	2	Q7	None	None	8	Right	Ordinal	Input
8	ecm2	Numeric	8	2	Q8	None	None	8	Right	Ordinal	Input
9	ecm3	Numeric	8	2	Q9	None	None	8	Right	Ordinal	Input
10	eca1	Numeric	8	2	Q10	None	None	8	Right	Ordinal	Input
11	eca2	Numeric	8	2	Q11	None	None	8	Right	Ordinal	Input
12	eca3	Numeric	8	2	Q12	None	None	8	Right	Ordinal	Input

Figure 4-27: Variable view

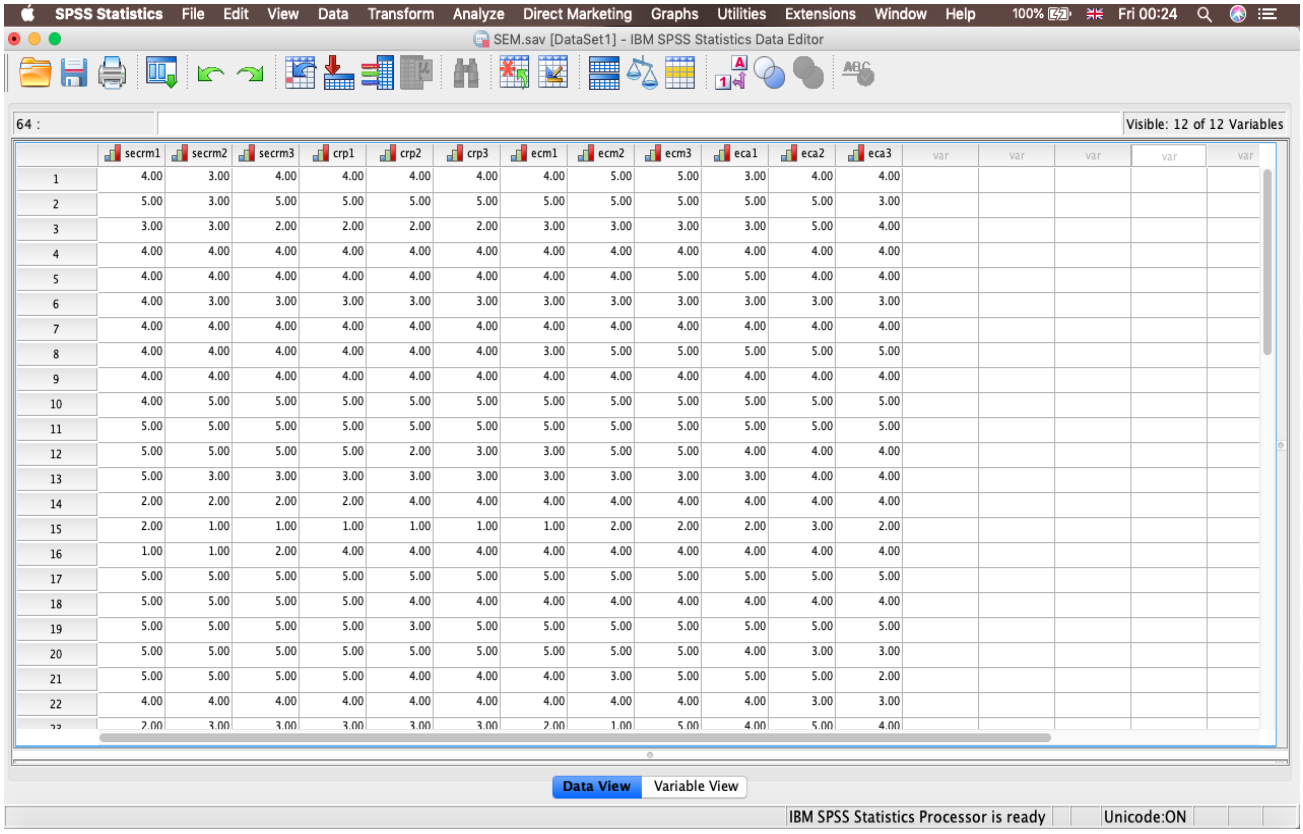


Figure 4-28: Data view

This research aims are to test the proposed hypothesis that the recommended approach was adopted for this part of the research. According to the adopted approach, the first stage is the measurement model to specify the casual relationship between the underlying constructs and the observed items. This can be achieved by confirming the reliability, validity, and unidimensionality. According to Hair et al. (2009), the unidimensionality assessment is the first stage before reliability and validity and provides accurate tests of the convergent and the discriminant validity of factor measurement to ensure that a set of items empirically measures a single dimension (Anderson and Gerbing, 1988).

As discussed, the two basic types of factor analysis with structural equation modelling for assessing unidimensionality are exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). As the scale items for this part of research adopted from the literature review were well grounded on a theoretical and empirical base, the CFA was selected as an appropriate analysis. In addition, the CFA is used when there is an existence of hypotheses about the grounded theoretical models (Bollen, 1989). Furthermore, after estimating the measurement model, the researcher should assess how well the specified model accounted for the data with one or more overall goodness-of-fit indices, which confirms that the estimated model is based on the observed data (Anderson and Gerbing, 1988).

After collecting the data from students, data editing was undertaken as part of the processing of data. According to Zikmund (2003), editing the data helps to ensure the competence, omission, and consistency of the data. From each questionnaire which the respondents answered, 75% of the survey were considered for data analysis and also with more than 25% of the questionnaires were excluded from the analysis (Sekaran and Bougie, 2013). All the data from the accepted questionnaires were inserted into SPSS, based on specific coding (assigning the specific number to each answer) in order to conduct a structural equation modelling analysis. In addition, the SPSS analysis for missing data analysis illustrated that there was no missing data and the main reason behind that was that the researcher monitored the process of data collection in order to have only minimal missing data.

The next part is to assess the multivariate normality of the distribution of variables. According to Hair et al. (2009), this is one of the important and necessary parts before conducting the structural equation modelling. Therefore, kurtosis and skewness of each dimension were used for examining any deviation from normality. According to Kline (2015), the acceptable values for the multivariate normality for skewness and kurtosis are not greater than three and eight respectively.

As mentioned before, the two-stage approach for SEM analysis involves the measurement model and the structural model used to test the hypothesis. Therefore, the AMOS 21 was used for both the measurement and the structural model analysis. The measurement model analysis, which specifies the relationship between the observed variables and the underlying theoretical constructs, was conducted by using CFA analysis, while the structural model, which specifies the casual relationship between the underlying exogenous constructs (independent) and endogenous (dependant) constructs, was conducted using AMOS 21.0. In the next section, the measurement models for each factor are analysed, and the result is discussed.

4.7.2.1 The Measurement Models Analysis

As the measurement model specifies the pattern by which each item is loaded onto latent variables, each factor was individually analysed in a separate measurement model. According to Hair et al. (2010), the measurement model should be re-specified and re-analysed in cases of any non-consistent results. Also, each factor needs to be assessed to ensure that the theoretical meaning of a factor is empirically captured by its indicators (Anderson and Gerbing, 1988). Therefore, in order to evaluate the validation of the factors in each measurement model, unidimensionality, reliability, and validity of each factor must be evaluated. The next paragraph

discussed the result of these two stages of the measurement model.

According to Croteau and Li (2003), unidimensionality indicates whether the multiple items measure only one factor or not. Unidimensionality was assessed in each measurement model separately. According to Hair et al. (2010), in order to assess unidimensionality, two indices should be considered in conjunction with the goodness-of-fit indices. These two main indices are as following:

1- The standardised items loading to measure a proposed underlying factor should be higher than 0.50.
2- The estimated correlations between the factors should be less than 0.85.

This section discussed the unidimensionality of each factor and the assessment of the measurement model. A number of items measured each factor in the measurement model. Total of 12 items was used in order to measure the factors. The social eCRM factor was measured by three items, which were labelled as secrm1, secrm2, and secrm3. The eCRM analytics factor was measured by three items labelled as ecra1, ecra2, and ecra3. The customer relationship performance was measured by three items labelled as crp1, crp2, and crp3. Finally, the eCRM maturity factor was measured by using three items, ecm1, ecm2, and ecm3.

Conducting the CFA using AMOS 21 illustrated that the fit indices were adequate in order to fit the data. Thus, the initial model fit the data. In the case of inadequate fit indices, the variable with the largest standardised residual needs to be identified and dropped in order to remove poorly fitting items from the measurement model (Byrne, 2016). There is no need to re-specify the measurement model as all indices were accepted. Figure 4-27 displays the final measurement model.

As shown in Figure 4-29, the measurement model consists of the factors (social eCRM, customer relationship performance, eCRM maturity, and eCRM analytics), measured items (secrm1, secrm2, secrm3, crp1, crp2, crp3, ecm1, ecm2, ecm3, eca1, eca2, and eca3) and measurement errors (e1 to e12). The measurement model was measured using 12 items. As outlined, a total of 12 items represents the four factors. Confirmatory factor analysis (CFA) results demonstrated that all the values were within the acceptable range. The fit indices reveal an acceptable fit based on this result. Therefore, the hypothetical measurement model fits the data reasonably well.

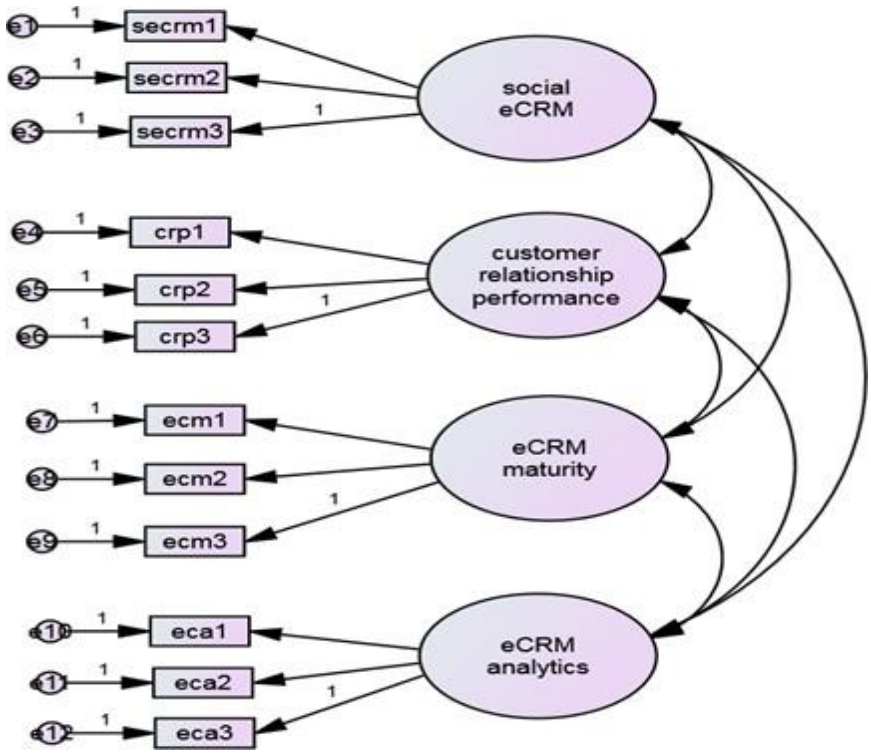


Figure 4-29: The measurement model

In order to check the internal consistency, the reliability analysis using Cronbach's alphas for the scale items were conducted. According to Nunnally (1978), the Cronbach alpha greater than 0.70 is considered significant. The results from the calculation of each construct show that the internal consistency is quite good as the constructs reliability range from 0.84 to 0.91, indicating high consistency.

In order to measure of model fit the CMIN, which is the Chi-square value in AMOS, must be divided by df, which is a degree of freedom (Hair et al., 2009). If the x^2/df ratios have values below 2.0, this indicates an acceptable model fit, but more than the value of 2.0 represents inadequate fit (Bollen, 1989; Byrne, 2016). The measurement of goodness of fit (GFI) and adjusted goodness-of-fit need to be assessed. GFI calculates the proportion of variance that is accounted for by the estimated population covariance (Tabachnick and Fidell, 2007). Looking to the variances and covariances, it can be determined how closely the model comes to replicating the observed covariance matrix.

The value of 1 indicated perfect fit, but 0.90 is also acceptable (Wongsansuckcharoen et al., 2015). CFI, or comparative fit index, over 0.90 is acceptable fit and closer to 1 is a perfect fit (Bentler and Yuan, 1999). According to Wongsansuckcharoen et al. (2015), root mean square error of approximation (RMSEA) and root mean square residual (RMR) values less than 0.05 are acceptable and smaller RMR means an even better fit, where 0 indicates perfect fit.

According to Browne and Cudeck (1993), the perfect fit for RMSEA is 0.05 or closer to zero. In addition, using the researcher's threshold levels for each index seen in Table 4-14, the following are the assessment of goodness-of-fit.

The result of CFA for the model using AMOS 21 were: CMIN= 49.621, df= 40, CMIN/df= 1.241, GFI=0.936, CFI= 0.993, RMR= 0.070, and RMSEA= 0.046, which indicates that all were considered excellent and significantly above the acceptable thresholds suggested by Hair et al (2009), Byrne (2016), and Browne and Cudeck (1993). Therefore, the measurement model provides evidence of good fit to the data. In addition, for the validity, the fit of the model confirmed the content validity consistent with the fact that the model is derived on a theoretical basis, discussion with academics and participants, and adaption of instrument that was used previously.

Table 4-14: Fit indexes

Fit statistics	Threshold
Chi-square/df	<3
CFI	>0.95
GFI	>0.90
RMSEA	<0.08
NFI	>0.9
AGFI	>0.9
RMR	<0.1

4.8 Testing the Hypotheses

Structural equation modelling was selected for evaluating the structural model. The SEM model helps to examine the hypotheses and specify the relationships among latent constructs in the research model. Therefore, in this section, in order to test the structural model, the path diagram of the full model was designed using AMOS
21. The model includes four factors made up of a total of 12 items and the proposed hypotheses were tested using SEM. The next section discusses the findings from testing the hypotheses.

In order to identify the relationship between variables, the hypotheses were tested. The proposed hypotheses can be accepted or rejected using SEM (Wongsansukcharoen et al., 2015). As shown in Figure 4-30, the five causal paths were depicted, from scrm to crp, crp to ecm, scrm to ecm, eca to crp, and eca to ecm. These paths represent the underlying hypotheses which were tested by SEM and illustrate the relationship between factors. The important purpose of

conducting this test in the research is to confirm the importance of data analytics for eCRM maturity, which can help the researcher to use this factor with its sub-factors in order to assess the eCRM maturity.

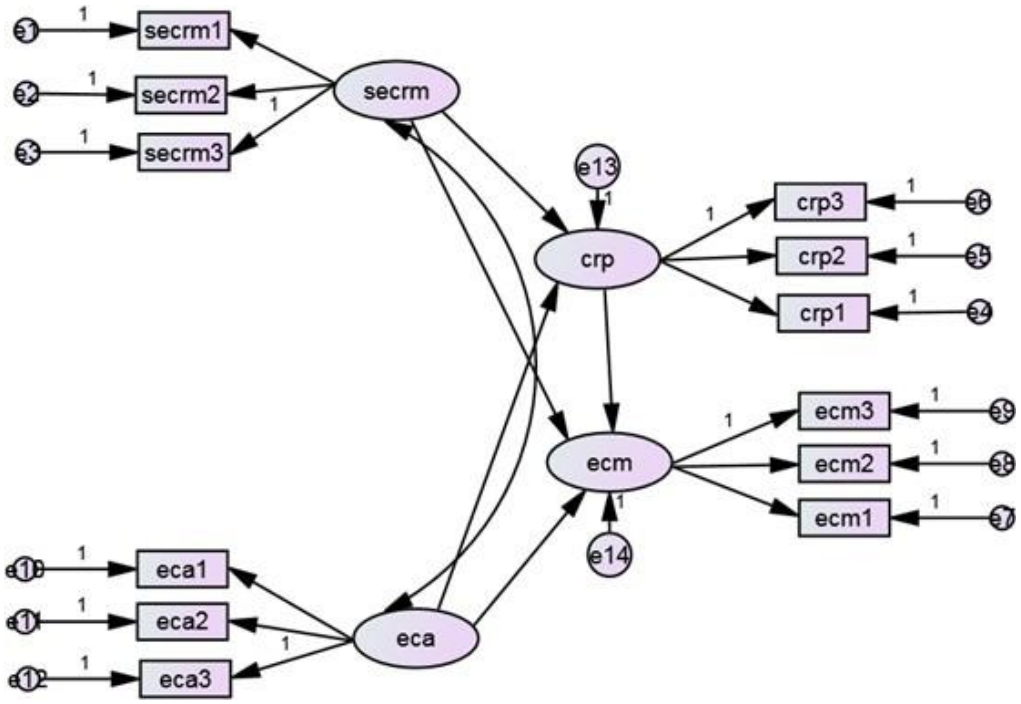


Figure 4-30: Path analysis

In order to assess the structural model, a wide range of goodness-of-fit indices was examined to indicate that whether the structural model obtains an acceptable level and fits the observed data. The single-headed arrow in the path diagram represents the extent to which one factor is dependent on another factor. For example, one of the single-headed arrows shows the direct relationship between social eCRM and eCRM maturity. Also, the covariance (correlation) between independent factors (social eCRM and eCRM analytics) is represented by double-headed arrows. This is where a relationship between independent factors was measured, but causal relationship was not hypothesised. Moreover, the measurement error represents an error in measurement where the variance of the observed variable is unexplained by a latent variable (factor), and also the residual errors result from random errors and/or systematic influences, which have not been explicitly modelled in the structural model.

Therefore, as mentioned, the research hypothesis was tested in order to figure out the relationship between the research factors. The following are the results from the testing the hypothesis from H1 to H5.

H1: Social eCRM has an impact on customer relationship performance

The structural model of the relationship between the SCRM and ECM shows as follows. The SEM test determines whether the data fit the hypothesised model or not. As the RMSEA= 0.042, CMIN/df= 1.024, CFI= 0.96, AGFI= 0.92, this illustrates good fit of the model to the data and all are above the acceptable level. In other words, this SEM complies with empirical data.

Also, the result of path analysis, as displayed in Figure 4-28, shows that the value of r^2 (R square) indicates the ability of the social eCRM factor to predict eCRM maturity. In other words, the ability of social eCRM factors as an independent factor in the interpretation of changes in eCRM maturity as a dependent factor. Therefore, it can be concluded that social eCRM has a positive effect on eCRM maturity and the hypothesis of the positive relationship between eCRM analytics and eCRM maturity was accepted.

H2: Customer relationship performance has an impact on eCRM maturity

The result indicates that a good fit of this model to the data. The fit indexes were: CMIN/df= 1.741, RMSEA= 0.079, CFI= 0.971, AGFI= 0.90. This means the structural model of the relationship between ECA and ECM is accepted. This result indicates that eCRM analytics has a strong effect in e-CRM maturity.

H3: Social e-CRM has an impact on eCRM maturity

In order to measure the relationship between CPR and ECM, a structural model was performed using AMOS 21version. The structural equation modelling test was conducted to determine whether the data fit the hypothesised model. The goodness-of-fit results of relationship between CPR as an independent variable and ECM as a dependent variable are CMIN/df= 1.642, CMIN= 16.416, CFI= 0.97, AGFI= 0.89, RMSEA= 0.042. The result of the goodness of fit test illustrates a good fit of data. According to the thresholds level, all fit indices are within the acceptable level. Hence, this study concludes that the effect of customer relationship performance on e-CRM maturity.

H4: eCRM analytics has an impact on customer relationship performance

The results of goodness-of-fit statistics of the SEM model, as presented in Table 4-16, show that all indices are well within the acceptable range. Therefore, there is a good fit of the model to the data. In addition, CFI= 0.94 and AGFI= 0.91 indicate that both are above the acceptable level and provide further support to the goodness-of-fit. Again, the hypothesis of the

relationship between ECM and CS is accepted.

H5: eCRM analytics has an impact on eCRM maturity

In order to determine whether the data fit the hypothesised model, the SEM test was conducted. The relationship between social eCRM and customer relationship performance factors should be tested in order to find out whether it is a positive or negative relationship between them. The results of goodness-of-fit tests show the data fits the original hypothesis.

Testing the proposed hypotheses using SEM illustrates that social eCRM has an impact on e CRM maturity. It means communicational channels, such as Facebook, are important for the maturity of eCRM and also affects the performance of customer relationship. Therefore, social e CRM can be added to the proposed eCRM maturity for banks in order to improve maturity assessment. On the other hand, eCRM analytics is identified as an important factor for the performance and maturity of eCRM. Therefore, it can be concluded that these factors are essential for eCRM maturity in banks.

4.9 Banks' eCRM Maturity

In this section, the eCRM maturity of one of the case study banks (Melli bank) is assessed. The eCRM maturity assessment was based on the proposed maturity model. The result can help banks to identify their strengths and weaknesses in terms of eCRM deployment.

4.8.1 Assessing eCRM Maturity

As mentioned, the dimensions and factors for eCRM maturity were extracted from the review of the literature and the questionnaire-based survey. The selection of eCRM maturity factors for the scope of this research was based on the following criteria:

1- The degree of acceptance for the dimensions and factors by the literature which will be reflected in the percentage of the factor occurrence in the literature
2- The link between the critical success factors and the eCRM failure causes
3- The identified factors for eCRM readiness, which also can be used for eCRM maturity assessment
4- The identified factors from the Middlesex University study

As discussed, the eCRM maturity model components (eCRM success factors) were identified and justified, based on the above methods. As mentioned before, the proposed eCRM maturity model is based on three dimensions: CSFs, maturity stage dimension, and assessment dimension. Therefore, after identifying the critical success factors, the next phase is to assign each eCRM maturity dimension to different levels, taking into consideration that the related levels for each eCRM dimension were recognised based on creating a questionnaire and asking eCRM experts in order to assign an appropriate level for dimensions in regard to proposed maturity levels. Therefore, CMMI was explained, and the experts' questionnaire results were analysed. In the next section, the details of each maturity level are discussed.

Maturity stage dimension

The proposed eCRM maturity model is based on five levels:

Level 0: this level is adopted directly from CRM3. This is a level where the eCRM implementation process is chaotic, and no or only a few processes are defined.

Level 1: the name of this level is adopted from CRM3 which the awareness level is. As can be seen from the definition of this level, it considers awareness factors which are important and consists of strategy and cultural factors. The result from analysing the experts' questionnaires illustrated that in this level just strategy could be considered. Therefore, strategy dimension and its associated factors were embedded in this level.

Level 2: this level in CRM3 is "managed level" and was adopted from level 2 of CMMI. CRM3 level 2 considers change management factors but, as seen in the result of the expert's questionnaire, cultural factors were assigned to level 2. Therefore, level 2 of the proposed e-CRM maturity model is managed level with consideration on cultural factors. In addition, the list of the factors used to measure this dimension illustrated that there is a lack of some important factors for assessing the level, such as employee skills.

Level 3: this level is defined as the level where CRM implementation processes are documented, standardised, and integrated into a standard implementation process for the organisation (Sohrabi et al., 2010). This level consists of process and knowledge management factors as eCRM's main components.

Level 4: this level is analytics level, which refers to measurement and control. Based on quantitative models and tools, eCRM process and activities are controlled and managed in this level. Therefore, this level focuses on analytics and measurement factors.

Level 5: this level is the level of optimising. It means that in this level an organisation needs to establish a structure for continuous improvement of eCRM. Therefore, optimised factors are essential. This level consists of technology factors such as operational eCRM and social e CRM factors.

The next step is the dimension assessment. In this step, in order to assess the level of eCRM maturity of an organisation and in this research's banks, each CSFs needs to be measured. Measuring the factors will help to understand how well each success factor has been deployed. Therefore, it is necessary to use an instrument for assessing eCRM implementation. For this study, an instrument was used. This instrument is Radar logic, which is a dynamic assessment framework and powerful management tool that provides a structured approach to questioning the performance of an organisation. The RADAR logic states that an organisation requires to:

- ➢ Determine the Results it is aiming to achieve as part of its strategy.
- ➢ Plan and develop an integrated set of sound Approaches to deliver the required results both now and in the future.
- ➢ Deploy the approaches in a systematic way to ensure implementation.
- ➢ Assess and Refine the deployed approaches based on monitoring and analysis of the results achieved and ongoing learning activities.

Therefore, the RADAR logic as an assessment tool can help banks to:

- ➢ Assess the maturity of the approaches they have implemented
- ➢ Assess the excellence of the results achieved
- ➢ Help to structure improvement projects

Hence, as the purpose of this research is to assess eCRM maturity in banks, the RADAR logic can be applied in order to assess each of the indicators of factors with the RADAR logic dimensions; Results, Approach, Deployment, Assessment and Review. Appropriate questions were designed for each factor, based on above four dimensions and then for each dimension a score of 0-100 was assigned. Finally, decision-makers of banks are asked to score the related factors, based on the four dimensions of the RADAR logic (appendix), and the average of each factor is considered as a factor score. Similarly, the average of the dimension is measured. According to Sohrabi et al. (2010), if at each level the dimension score was higher than 70, this level can be considered as a mature level, and the level is passed. The average score can represent the maturity level of each dimension, so in this model first each factor is scored based on RADAR logic dimensions, and then the average is assessed and assigned to the dimension. In the next section, the maturity of eCRM in Melli bank is assessed.

4.10 eCRM Maturity for Melli Bank

The results and findings regarding eCRM maturity for Melli bank are shown in Table 4-15. Thes results are based on managers' responses, which includes RADAR questions, average, factor score, and maturity of each factor and also whole dimension. The findings illustrate and highlight the specific areas which need attention in order to achieve eCRM maturity. As can be seen, in terms of strategy Melli bank has a maturity score of 72.5. All measures (factors) in this dimension are greater than 70, which indicates that the bank has adequate maturity and capability for strategy factors. Therefore, according to the research proposed eCRM maturity model, Melli bank can pass level one which emphasises on strategy dimension and its associated factors.

In order to check that level 2 can be assigned to Melli bank, the organisational culture dimension and its factors were evaluated. The findings from organisational culture factors show that all factors are greater than 70 and also the dimension has a score of 74.75, which means that all measures and total dimension are mature. Therefore, Melli bank can be considered as level 2 in terms of the eCRM maturity. The level 3 in the proposed maturity model is the process and knowledge management dimensions which were assigned. Given that the result from knowledge management dimension shows a score of 74.68, while all its factors are greater than 70, this dimension is mature. In the meantime, the process dimension has a score of 72.5 and maturity and none of its factors are less than 70. Thus, level three of the proposed

maturity model indicates that the process and knowledge management and also the results confirm the maturity of the bank in terms of the process and knowledge management, and level three is assigned to Melli bank.

Level 4 of eCRM maturity model indicates the importance of analytics and measurement dimensions. Therefore, these dimensions should be considered and evaluated to reach level 4 of maturity. The findings for the measurement score of dimensions show a score of 56.66, which means no maturity. Also, none of the allocated factors for this dimension are greater than 70, and so the dimension and its associated factors need urgent attention. On the other hand, the findings for the second compulsory dimension for this level, the analytics, show a score of 61.56, which means no maturity again. Surprisingly, just one factor in this dimension, which is security, is greater than 70 and it is mature. Therefore, Melli bank needs urgent action with the data analytics, data quality and analytics tool, which are important factors for the e CRM. This result shows that Melli bank does not have the required criteria to be in level four of maturity.

Furthermore, the last level of maturity, which is level 5, considers the technology dimension. In this level, technology dimension factors such as communicational channel and social eCRM are assessed. According to the findings from Melli bank, the technology dimension is 56.79 which is less than the threshold level of 70. Therefore, this area is another area in which Melli bank needs urgent attention. To summarise, based on the assessment tool the eCRM maturity of Melli is level 3 and Melli bank needs to improve the current status of eCRM to the extent that all missing dimensions and associated factors, such as technology, analytics, and measurement, get the least appropriate score.

To conclude, this maturity tool assesses the overall eCRM maturity level and provides a list of weaknesses based on factors and dimensions. This tool provides an approved approach that enables banks to drive real benefits in terms of dramatically improved consistency in eCRM deployment. Also, this tool delivers cost savings with earlier and more useful error detection and, finally, it helps banks to keep the big picture in mind while focusing specifically on eCRM improvement. In addition, the researcher believes that introducing an assessment tool for eCRM readiness and maturity helps banks to compute their eCRM easily. Therefore, in Chapter 5 the proposed tool will be discussed. Furthermore, the next chapter will discuss the qualitative approach for this study.

Table 4-15: eCRM maturity for Melli bank

Dimension	Factor	R	A	D	A&R	Average	Factor Score	Maturity
Knowledge management	Knowledge acquisition and application	80	80	85	60	76.25	74.68	Mature
	Knowledge diffusion	80	75	70	60	71.25		
	Employee knowledge	85	80	75	70	77.5		
	Knowledge review and revise	85	85	70	55	73.7		
Technology	Technology integration	90	80	50	50	67.7	56.79	Not Mature
	Operational eCRM	80	80	70	30	65		
	Analytical eCRM	95	90	45	25	63.75		
	Social eCRM	50	10	10	10	20		
	Communicational channels	90	80	50	50	67.5		
Analytics	Data analytics	80	85	50	30	61.25	61.56	Not Mature
	Data quality & management	70	65	40	20	48.75		
	eCRM analytics tools	75	75	60	50	65		
	Security	90	75	55	65	71.25		
Organisational culture	Employees	80	80	70	70	75	74.75	Mature
	Management commitment	85	85	60	55	71.25		
	Change management	80	85	75	45	71.25		
	Customer-centric orientation	90	90	90	20	72.5		
	Employees' satisfaction	90	90	75	80	83.75		

Strategy	Relationship management strategy	90	80	70	60	75	72.5	Mature
	Customer strategy	95	65	65	55	70		
	Value creation strategy	90	80	60	60	72.5		
	Vision	90	80	60	60	72.5		
Measurement	Customer satisfaction measurement	90	60	50	55	63.75	56.66	Not Mature
	Customer loyalty	80	20	40	10	37.5		
	Performance measurement	75	80	55	65	68.75		
Process	eCRM processes in marketing	80	85	65	60	72.5	72.5	Mature
	eCRM processes in sales	90	90	60	55	73.75		
	eCRM processes in service	90	95	50	50	71.25		

Chapter 5
Qualitative Research Analysis

Chapter 5

5. Qualitative Research Analysis

Objectives of this chapter are as follows:

- ➢ Discuss the data collection and analysis of the qualitative approach
- ➢ Present the findings
- ➢ Comparison between quantitative and qualitative findings
- ➢ Discuss the reflection on the proposed framework

This chapter discusses the findings of the qualitative approach as mentioned before. The qualitative approach provides a different approach for researchers based on their inquiry. The processes are similar to the quantitative approach, but they are different in terms of data, data analysis, and diverse designs. Unlike quantitative data, the qualitative approach relies on image and text data. In general, qualitative data are non-numeric and cannot be quantified.

5.1 Qualitative Designs

As this research follows the mixed methods approach, collecting both qualitative and quantitative data are important. As each approach has limitations and, of course, strengths, this helps to obtain different types of information, and obtain and develop a strong understanding of the research questions or problems by combining them. One of the data collection types for this approach is the interview, which was selected for this research. It allows the researcher to control over the line of questioning and the interviewer can provide historical information about the problem.

Using interviews is important for achieving a good response; hence the interviewer has a critical role to train and motivate interviewees, locate and enlist the cooperation of interviewee, and record the asked questions to meet the objective of the research. The interviewer must ask follow-up questions in cases where questions are not answered in order to increase the response rate.

The characteristics of qualitative research are conveyed by a number of researchers (Creswell, 2014; Saunders et al., 2012; Marshall and Rossman, 2010). They mention that qualitative research has a natural setting and, unlike quantitative research, has face-to-face interaction. In this approach, the researcher is a key instrument for collecting data using interviews or any other types of data collection for qualitative data. Qualitative research includes inductive and deductive approaches, and it means that the process starts inductively but as the analysis moves forward deductive thinking plays a major role (Saunders et al., 2012; Creswell, 2014). An example of this can be the construction of a jigsaw puzzle.

In the qualitative research, participants have the main role for the research problem, and not the researcher, which is important. This process is emergent, and the location or site visited, type of questions, and data collection form can be modified during the process. In other words, there is no tight prescription. There are different types of qualitative research design, namely narrative research, which is a design of inquiry from the humanities. In this approach, the researcher studies the lives of individuals and asks questions in order to obtain stories about their lives (Riessman, 2007).

Another type is phenomenological research. This approach is a design of inquiry coming from philosophy in which the researcher describes the experience of individuals of a phenomenon, and it is described by the participant (Creswell, 2014). Grounded theory is a design of inquiry from sociology in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants (Creswell, 2014). Ethnography is another type of qualitative approach, which is a design of inquiry from sociology and anthropology. In this design, the researcher studies language, shares patterns of behaviours and actions of the cultural group in a natural setting.

Finally, case studies are a design of inquiry in which the researcher develops an in-depth analysis of a process, activity, or individuals, primarily through evaluation (Creswell, 2014). The qualitative design was chosen from these possibilities, and the selected design for this research is case studies. The reason is that the purpose of this research is to identify the main eCRM readiness dimensions by interviewing decision makers and managers of banks. This is where the researcher evaluates the activities and processes in order to answer the research questions. Therefore, the research design can be exploring processes, learning about culture sharing or just studying individuals.

Backyard research is a type of research in which researchers study their organisation or friends. This type of study raises issues in disclosing the information due to the imbalance of power between participants and inquirers (Creswell, 2014). However, for this research, theresearcher interviewed five case study bank managers, who did not have any relationship with the researcher to prevent inaccurate information.

Potential participants must be given sufficient information to allow them to decide whether or not they want to take part in a research study. Hence, getting permission from five case study banks was important as it involved face-to-face interviews. This permission from each bank was obtained by requesting an interview using an information sheet. In addition, a consent form was used to invite the managers to take part in the study and to protect the rights of human participants.

5.2 Collection and Preparing of Data

According to Creswell (2014), data collection procedures for qualitative data needs the following steps:

- Identify the purposefully selected sites or individuals
- Number of sites and participants
- Type of data
- Data collection types

The site is five purposefully selected case study banks in Tehran, the capital city of Iran. The reason for choosing these banks was their reputation, location and size, fees, and amount of transactions. Two state banks and three private banks were selected for identifying the main dimensions affecting eCRM readiness in Iranian banks. Having both private and state banks provides a good understanding of how these dimensions impact different sectors. The case studies were chosen to help the researcher to understand the research questions as this method did not suggest random sampling to be the same as the quantitative approach. In addition, a total of 10 managers were interviewed in order to collect data.

In terms of the size of the sample, as this research follows a case study design for qualitative design, four to five cases are acceptable (Creswell, 2014). Some other approaches, such as saturation,

place emphasise on stopping data collection when the categories saturated (Charmez, 2011). This justified the number of case studies in this particular research.

The data collection procedures for qualitative research have four types: audio and visual materials, observation, interviews, and documents. All these types have limitations and strengths but, for the purpose of this research, an interview approach was appropriate as mentioned before. As participants, managers of banks cannot be observed, and documents may be protected so that some information will be unavailable for public or even private access. Therefore, this type is the best option, using interviews based on semi-structured open-ended questions.

As mentioned before, data collection and analysis can use either inductive or deductive approaches. A deductive approach seeks to use existing theory to shape the approach to adopt data analysis and qualitative research processes, while an inductive approach seeks to build up a theory that is adequately grounded in the data. For this qualitative research, a deductive approach was selected as the proposed framework to help the researcher to organise and direct the data analysis and formulate the research questions.

Adopting a deductive approach has advantages because it links the research with existing knowledge in the eCRM area and helps the researcher to devise an initial analytical framework. This identifies the main dimensions and factors and finds the relationship between them. This framework helps to start and direct data analysis. In addition, an inductive approach does not start with a defined framework, and theory emerges from the data collection and analysis process. Furthermore, this approach is difficult to follow and not suitable for an inexperienced researcher as it starts with collecting data.

5.3 Data Analysis

There are three main types of data processes: summarising of meanings, categorisation of meaning, and structuring of meaning using narrative.

Categorising data consists of developing categories and attaching them to meaningful pieces of data. Deriving categories depends on research objectives. In other words, different researchers interpret differently, and no one can one is right or aother wrong (Saunders et al., 2012). Then, a unit of data, which can be a sentence, a number of words or a paragraph, needs to be attached to the appropriate category.

The first step before data analysis is data recording. It means identifying what data the researcher recorded and the procedures used for recording. It is necessary to plan and develop a protocol for interviews in order to ask questions and record answers during the interview (Creswell, 2014). This can be achieved by writing a note or recording with video or audio. In general, handwritten notes are better due to the possible failure of recording equipment. In each interview for this study, handwritten notes were made by the researcher.

Summarising data means condensing the meaning of long statements into fewer words (Saunders et al., 2012). Therefore, summarising is compressing a large amount of text into a briefer statement. The relationship can be identified between themes, and the researcher can return to these to seek to establish their validity. Summarising data makes the researcher aware of the emerged principle themes from the interview and the way the categorical data have been categorised into their parts (Saunders et al., 2012).

According to Yin (2016), two analytical procedures are applicable to qualitative research based on a deductive approach. This examines how the perspective of a deductive approach that underpins these impacts upon processes for data analysis. These approaches are pattern matching and explanation building. Pattern matching predicts a pattern of outcomes, based on theoretical propositions to explain what the researcher expects to find. In this approach, the researcher only needs to develop a conceptual framework using the literature review and test it in order to explain the findings. Thus, the researcher tests the adequacy of the framework. In this case, the researcher has found an explanation for possible threat to the validity of the conclusion (Saunders et al., 2012).

According to Yin (2016), rather than testing the conceptual framework, another pattern matching procedure is to build an explanation while collecting data and analysing them. This approach tests a conceptual proposition, however, in an iterative manner (Saunders et al., 2012). Yin (2016) conveys that this approach is a hypothesis-testing approach that is related to explanatory case studies. It means that in the theoretical framework, data collection starts from case study number one, findings are then compared in relation to the conceptual framework, if necessary amendments will be applied, and then finally further iteration of this process is undertaken until a satisfactory explanation is derived.

In this research, the data collection was commenced with a well-defined research question which was discussed earlier. Then the framework was derived from the literature, and the appropriate sample was selected. In addition, the type of banks and number of case studies in order to undertake data collection were discussed. Data collection process started with an initial

set of categories derived from the proposed framework.

Data analysis in qualitative research proceeds hand-in-hand with other parts of developing the qualitative study (Creswell, 2014). This means in this approach, unlike quantitative research in which the researcher first collects and then analyses and writes the reports, the researcher will interview the participants after analysing earlier data and write memos. As the text and image data are rich, the researcher only needs to focus on some parts of data, again in contrast with quantitative research. According to Creswell (2014), data in qualitative research needs to be aggregated into a small number of themes.

For this research, the qualitative computer data analysis program was used to assist in organisation data and coding data. As hand coding is time-consuming, this method is appropriate and easy. This software helps the researcher to organise, sort, and search for information in text (Creswell, 2014; Guest et al., 2012). Using this type of software can facilitate the process of sorting, locating data, coding data, and comparing different codes. However, using qualitative software is a good option compared to hand coding, but this needs skills and training.

There are many popular software applications for qualitative data analysis, such as Atlas.ti, MAXqda, or QSR NVivo. For this study, NVivo as the powerful software was selected. NVivo supports qualitative and mixed methods research and helps the researcher to organise, analyse, and importantly find insights into qualitative data such as interviews for this research. By using NVivo, the researcher can save time, quickly organise, store and retrieve data, work more efficiently, rigorously back-up findings with evidence, and uncover connections (QSR, 2017).

According to Creswell (2014), the first step in a data analysis process is to organise and prepare data, as discussed earlier, reading through all data and writing a note or recording general thoughts. The second step is the coding of all data. According to Rossman and Rallis (2011), coding is the process of organising data by bracketing text and writing a word representing a category in the margin. For this study, coding was based on dimensions affecting eCRM readiness in Iranian banks.

The third step is to generate a description of the setting or people, as well as categories or themes for analysis (Creswell, 2014). In the fourth step, the researcher conveys descriptive information about each participant. Finally, the researcher interprets the findings or results. In other words, the researcher confirms the previous information which was based on literature or theories.

This study was attempted to identify the main dimensions affecting eCRM readiness in Iranian banks by interviewing bank decision makers. The researcher seeks to identify and describe patterns and themes from the perspective of managers of banks and then attempts to understand and explain these patterns and themes.

5.4 Interview with Banks Decision Makers

As mentioned in this study, a qualitative data analysis computer software package, NVivo, was used in order to the analysis of data. NVivo helps to import, organise, code, and visualise data. A total of 10 cases were interviewed in five case study banks. These case study banks were included private and state banks in Tehran, the capital city of Iran. According to QSR International (2016), NVivo can help in six ways for analysis of interview data: transcribe the interview recording, group the responses to each question, find and catalogue themes to make sense of the data, see the connections between themes and move forward analytical insight, make comparisons between participants and stay organised and focused on your research design.

Interview analysis helps with the description, exploration, theory testing, comparison, evaluation or comparison of data. NVivo is one of the tools that help to prevent loss of access to source data by recording, sorting, matching and linking data. This leads to answering research questions. According to Bazeley and Jackson (2013), NVivo helps the researcher to:

- Manage data: to organise and keep track of the many messy records that go into making a qualitative project.
- Manage ideas: to organise and provide rapid access to conceptual and theoretical knowledge generated in the course of study.
- Query data: to ask a question of the data and have the program retrieve from the database all information relevant to determining an answer to that question.
- Visualise data: to show the content of cases at various stages of the interpretive process, and to represent the relationship among these items visually.
- Report from the data: using contents of a qualitative database, including information about and in the original data sources, the ideas and knowledge developed from them, and the process by which these outcomes were reached.

Interviews with bank decision makers were conducted in five private and state banks: Pasargad, Sarmayeh, and Parsian are private, and Tejarat, Melli are state banks. The following are the

interview transcripts of each case:

Pasargad bank

Pasargad is a private bank. The interview was conducted in this bank with two different branch managers. Based on the interview questions (Appendix) which were inspired by the literature review, the answers were reflected. In terms of eCRM understanding, both managers knew the definition of eCRM and understood the benefits of eCRM implementation. One of these managers defined the eCRM as a combination of strategy and technology to keep customers loyal.

They stated that they have an eCRM strategy in their bank and this helps banks to determine what the bank is trying to accomplish. They believed that eCRM strategy is an essential part of eCRM implementation and cannot be neglected. In terms of choosing eCRM software, they agreed that choosing eCRM software is a straightforward task. The important thing, based on their responses, was budget, i.e. how much the bank is willing to pay for software.

All managers stated that they take into consideration legal issues in adopting eCRM software , such as privacy. They knew that customer knowledge is valuable for their bank, but data privacy must be considered. In addition, they update software frequently and believe that this brings better functionality, keeping safe from known security threats, fixing the bugs and providing more efficient software.

One of the managers believes that eCRM helps the bank to grow efficiently, discover new insights from data and connect with their customers. He believes that despite the importance of eCRM deployment but only some of the banks implemented eCRM. Furthermore, another manager stated that eCRM employs all the techniques to maintain customers by understanding them and enhancing communication.

All managers stated that IT infrastructure is very important for their bank, and IT infrastructure integration with eCRM is not an easy task and needs reorganisation as it is expensive. They believe that IT infrastructure is composed of physical and virtual resources that support the flow, storage, processing and analysis of data. In addition, they stated that IT infrastructure consists of software, hardware, equipment and services used in common across banks.

They stated that all customer information distributes across the bank and there is a consolidated view. Also, for tracking customers, one of the managers stated that their bank categorised their clients based on information, which they have, and recently they started to rank customers based on data gained. They stated that one of the eCRM strategies of the bank is to categorise customers and build a relationship with them. They stated that their bank develops new products and services based on customers' needs which helps them to maintain customers.

Both managers stated that eCRM deployment needs employee training and this process is costly. In their opinion, one of the most significant obstacles for accepting technologies in organisations is employee resistance to change which is very dangerous for the organisation and needs more support from top management to overcome this problem. One of the interviewees suggested managing resistance to change by using motivating techniques. He stated that in order to overcome this problem it is necessary to educate and communicate effectively. He believes that this process is not easy and needs to be delivered consistently.

They stated that as customers are important for banks, there are feedback and complain options available for them. Based on these, they can improve their service and provide better customer service. These can be either offline or online. They stated that by gathering feedback after a transaction, a bank could gain insight into what drives satisfaction, engagement, and loyalty. By doing this, a bank uncovers gaps in their offerings and services and can develop and maintain strong customer relationships.

Both managers believe that training is essential, and they keep monitoring their staff to make sure that they have the right eCRM skills. They believe that eCRM training is vital to ensure its adoption and success. One of the interviewees acknowledged that banks in Iran are in a rush to implement eCRM without having clear strategies. They believe that an understanding of the role of individual users in the eCRM process is important and can be achieved by training.

Regarding communication channels, they stated that these are an essential part of eCRM and banks need to focus on them wisely. One of the managers stated that communication is the key to eCRM success and there are a variety of channels nowadays due to the evolution in communication technology. They stated that their bank uses different communication channels such as fax, email and SMS.

Both interviewees stated that organisational culture is an important dimension for eCRM readiness. They believe that a desirable outcome of eCRM is related to organisational culture. They mentioned that organisational culture represents bank staff behaviour with customers and

when a bank is more customer-focused it will have better performance. In addition, they ranked technology, strategy, and employees' eCRM perception as first, second, and third dimensions in eCRM readiness.

One of the managers stated that customer service is not just welcoming customers and smiling at them. Customer service is helping customers to make an informed decision, having a desire to do the right thing for customers, provide accurate information to customers, and view things from a customer's point of view. They both stated that lack of information about customers is an important weakness for providing good customer service.

Both bank managers stated that they have between five and ten employees who are in direct contact with customers. They stated that they track their customers with a call centre, and recently they added contact management software. One of the managers stated that they measured satisfaction quarterly and another manager said it was done every six months. In addition, they stated that the reliability and accuracy of employees in their work is important which this brings customer satisfaction and loyalty.

Parsian bank

Parsian bank is a private bank. Regarding the definition of eCRM, both managers understood the concept, and one of them stated that eCRM is a strategy with which to build a long-term relationship with customers to attract them, and answer to their needs through the Internet. Another manager also stated that eCRM is a technology to interact with customers and gain productivity.

The interviewees stated that there is eCRM strategy in their banks. The manager stated that e CRM strategy helps banks to attract customers and, more importantly, to retain them. They believed that choosing software for their banks sometimes proves difficult because of competition in the market. They stated that the legal issues in the deployment of eCRM are important and they consider privacy.

They stated that they are improving IT infrastructure but the integration of existing IT with eCRM is difficult, costly and needs reorganisation. They also stated that they designed and implemented different tools for providing services to customers and build good long-term relationships with their customers in order to facilitate services for them. One of the interviewees stated that they have planned to develop their e-services and they aim to take the banks into customers' homes via the Internet, and therefore customers no longer need to attend

the bank in person.

The interviewees stated that they track their important customers by data obtained from them and, based on this information, they can provide products and services tailored to them. The managers believed that training is necessary for deployment of eCRM, which proves costly. They stated that Parsian has a variety of services to fulfil customer needs, such as Internet banking, telephone banking, and SMS services.

They stated that they overcome resistance to change through communication and they have training courses each month to improve their staff skills and knowledge. In terms of ranking eCRM readiness factors, one of them believed that strategy and organisational culture are important and the technology and employees eCRM perspective. On the other hand, the second manager believed that culture and strategy are important and, following them, technology and employees eCRM perspective are ranked.

Both managers knew the benefits and advantage of using eCRM, as one of them stated that e CRM implementation helps retain customers and it is beneficial for banks, alongside providing good services to customers and creating customer satisfaction.

They mentioned that the customer satisfaction measurement is assessed every three months and they have a sufficient system to obtain feedback and complaints from customers. One of the managers stated that they distribute information to all customer across systems. He stated that eCRM is a solution for tackling competition. Banks need to understand customer needs and act immediately to fill the gaps. This helps to create long-term, two-way relationships with them and brings advantages to banks.

One of the managers stated that eCRM operation is different in each particular bank, and it depends on the views of decision makers. He believed that eCRM is not just technology but, in many banks in Iran, managers only install the software and then think this is eCRM. He added that banks could use analytical tools to categorise their customers and, based on their needs, provide an appropriate service.

Sarmayeh bank

Sarmayeh bank is a private bank, and an interview was conducted with two Sarmayeh bank managers. They stated that they understand the meaning of eCRM and both had good knowledge regarding the definition. One of them stated that eCRM is traditional CRM plus the use of the Internet, and the second manager stated that eCRM is electronic customer

relationship management and keeps customers through the Internet and helps with the organisation to track customers.

One of the managers described eCRM as a set of activities carried out by banks to create a long-term relationship with customers, from opening an account even they close their account. All information about customers is stored in a database for use in the future.

Both interviewees stated that there is a strategy for eCRM, but one of them stated that this strategy has to be updated to fit the requirements of an organisation. In terms of choosing software, one of them believed choosing appropriate software for a bank is not complicated and stated that there is a research group consisting of young and talented people to identify software. Managers stated that they update their system frequently and their bank has an e CRM strategy.

The interviewee stated that they are developing their IT infrastructure and they integrated the existing IT with eCRM, and it was a costly procedure. They also always consider privacy in updating software time. All managers stated that they track potential customers by information that they have about their needs and can be accessed by contacting them through emails and direct calls.

The interviewees agreed that training is essential in technology adoption and they have training courses, which are compulsory for all staff. One of the managers believes that training can help employees to update their skills and also strengthen them to provide better service to customers.

They stated that, in terms of customer categorisation, they have different departments to deal with various categories, such as retail customers, VIP customers, or corporate customers. One of the managers stated that many banks in Iran do not care about technology, strategy and culture and believe that the best relationship with customers is just traditional face-to-face relationships.

He mentioned, unfortunately, some customers do not trust banks, preferring to trust the person who serves them, and because of this at the time of arrival to the bank they refer to a known person for their enquiry. The employees are well trained, and there is no difference between them, so this is only the result of a lack of trust. He added that all staff have knowledge about products and services, and how to solve customers' problems.

They stated that their call centre operates 24/7 and customers can dial a number to talk about

their enquiry at any time. Based on customer ID, the information of customers can be retrieved but this information is confidential, and only employees in the IT department can have access. They stated that only a few banks have 24/7 services for customers. In addition, there is a department to investigate customers' complaints and check what the problem is. This can be done either through the website or off-line.

Melli bank

Melli bank is a state bank. The interview was held with two managers in this bank. The first manager knew the definition of eCRM and said that eCRM is a technology for providing fast services to customers, which can lead to customer loyalty. The second manager knew the abbreviation of eCRM, but he felt that eCRM is just using technology to get customers.

The interesting statement was one of the manager's opinions about customer loyalty, where he said that customer loyalty does not exist, and customers are only attracted to banks which give better services, products, and higher interest. Both managers stated that there is a strategy for the bank but the top managers, such as the CEO, have access to this strategy and others did not have any information about it.

They stated that they take into consideration legal issues in the deployment of eCRM and they agreed that choosing appropriate software is a difficult procedure. They stated that the integration of IT infrastructure with eCRM is very expensive and costly. In terms of categorising the customer, one of the managers stated that they categorise them by information and data obtained but the second manager did not know about it.

All managers agreed that training is essential, but they stated that they have training courses based on the needs of banks. They stated that intensive communication is vital to overcoming resistance. One of the interviewees stated that organisational culture and use of technology are important factors, followed by strategy. The second interviewee stated that the first factor is organisational culture and then it is strategy, and technology in assessing eCRM readiness.

The first manager stated that the benefits of eCRM are trust and service quality to customers and increased revenue and building good relationships for banks. The second manager also stated that eCRM benefits are for both customers and the bank. One of the interviewees stated that culture and strategy are important for assessing eCRM readiness, followed by technology and different perception, and employees' eCRM perception.

They stated that customer information distributes across all channels. The customer information document is placed in a single database, and eligible staff can easily access and manage it. They also stated that they record customer interactions and automated workflow processes, which helps managers to track performance and productivity.

One of the interviewees stated that customer satisfaction measures are determined monthly, and another manager stated that it was every three months. They both believe that eCRM is beneficial for their bank and they believe that accurate information about customers can help them to maintain customers easily. In addition, they stated that they track their customers by contacting them directly.

Tejarat bank

Another bank is Tejarat bank, which is a state bank. Both managers of this public bank were aware of the definition of eCRM. They described eCRM as a tool for banks that facilitates relationships with customers. They knew that choosing adequate eCRM software is difficult and costly. One of the managers stated that they had requested tenders. This process helps banks to ask suppliers to submit a bid and, based on the price and features; the adequate software will be chosen.

Both managers confirmed the importance of strategy for eCRM and claimed that they have clear vision and strategy for their relationships with customers. In terms of privacy, they stated that they have privacy management to prevent customer backlash. Another manager also believes that banks must implement more robust privacy policies and give higher priority to their customer privacy initiatives.

They stated that they categorise their customers according to their value using the data obtained from different communication channels. There are 5 to 10 employees in their bank, who have direct contact with customers. They stated that they record customer information once and then store this in their database. This data can be used frequently in all branches. One of the managers stated that they update customer information in each conversation or contact with them to maintain up to date information.

They stated that they have various communication channels to interact with customers, such as email and telephone banking. In terms of updating software, they state that the vendor is

responsible for updating the system and dealing with security-related issues.

One of the managers stated that training is essential for eCRM readiness, while another manager believes that they should recruit experts and skilled staff rather than training them. This could be for reducing cost and time. They both stated that organisational culture and strategy are important dimensions in eCRM readiness. They have feedback and complaint systems both online and offline. They both stated that in order to overcome resistance to change, providing rewards is a key.

They have a website for their bank and customers can easily access it, but they stated that some customers prefer to refer to the bank directly. In addition, they claimed that low customer service could be due to the lack of information about customers and customer service culture.

5.5 Data Interpretation

This section discussed the finding of the interviews conducted with the decision makers of five case studies banks in Iran. The data from bank managers' interviews were analysed using NVivo, which was used for interpreting findings and comparing them with each other. NVivo is a qualitative data analysis software and helps researchers as a research tool. In this study, as making sense of interview data was important to deliver robust results, NVivo was used to analyse interviews. As mentioned in the methodology chapter, mixing the qualitative and quantitative research data can help the researcher to gain breadth and depth of understanding and corroboration, while offsetting the weaknesses inherent to the use of each method by itself. Therefore, triangulation is helpful to identify aspects of a current study more accurately by approaching it from different vantage points, using different techniques.

After importing managers' data (interview transcript) into NVivo, the next part is to create case nodes. The case nodes play an important data management role and help to gather all the material about an interview at a case node (Figure 5-1) in order to view the material for that interview altogether and ask questions about it.

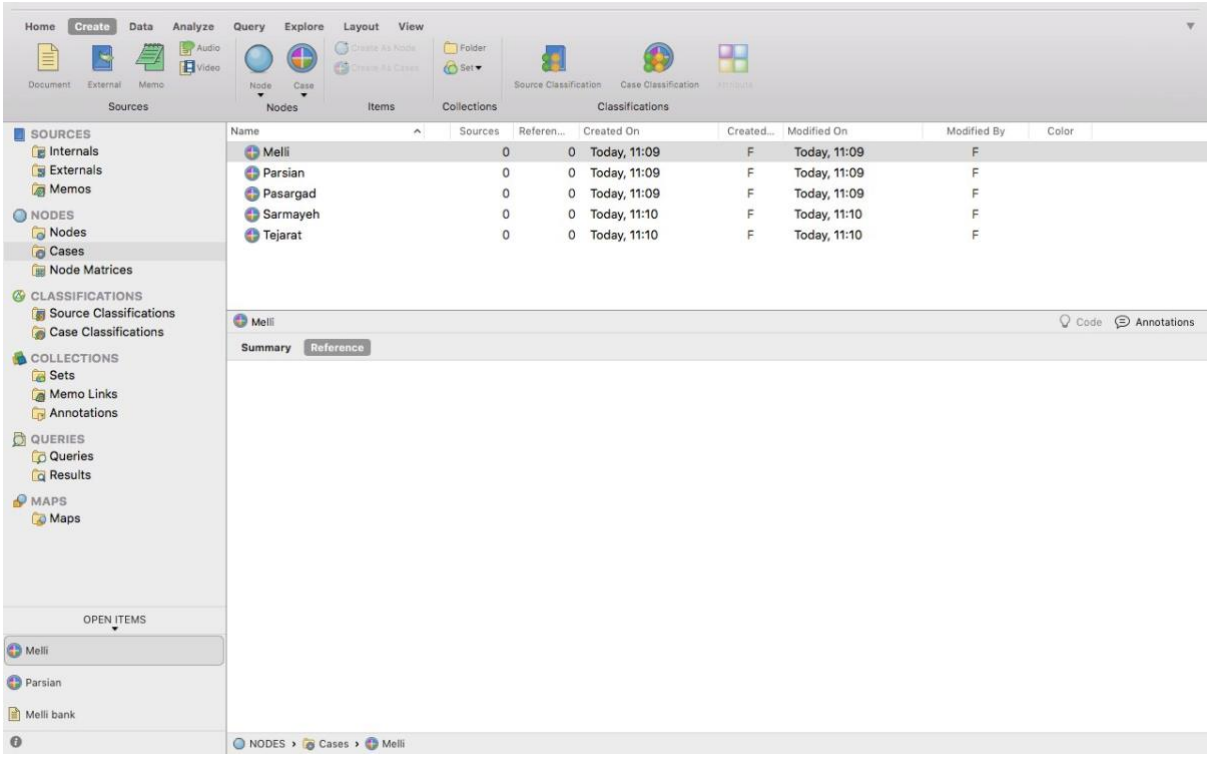


Figure 5-1: The case nodes in NVivo

As the purpose of this analysis is to identify the main dimensions affecting eCRM readiness, the sources were coded based on the topic that needs to be explored. Hence, three nodes (strategy, culture, and technology) were created and used. These nodes were used to code the interview transcripts by start reading the documents until the researcher found something that should be coded under one of the nodes created before.

Word frequency queries is a text search query in NVivo. Running this query helps to search for a selected word in the word frequency query results. This is used to list the most frequently occurring words in the interviews. As the research aims to identify the main eCRM readiness dimensions based on managers perspectives, this query was used. In addition, this study attempts to make sense of what the interview participants (decision makers) have tried to say about eCRM readiness.

Figure 5-2 shows the word frequency for Melli bank managers. This is composed of words used in particular texts or subjects and, for this research, interview questions in which the size of each word indicates its frequency or importance. This helps the researcher to gain a better understanding of the list of commonly used words in the interviews and answers to the research question.

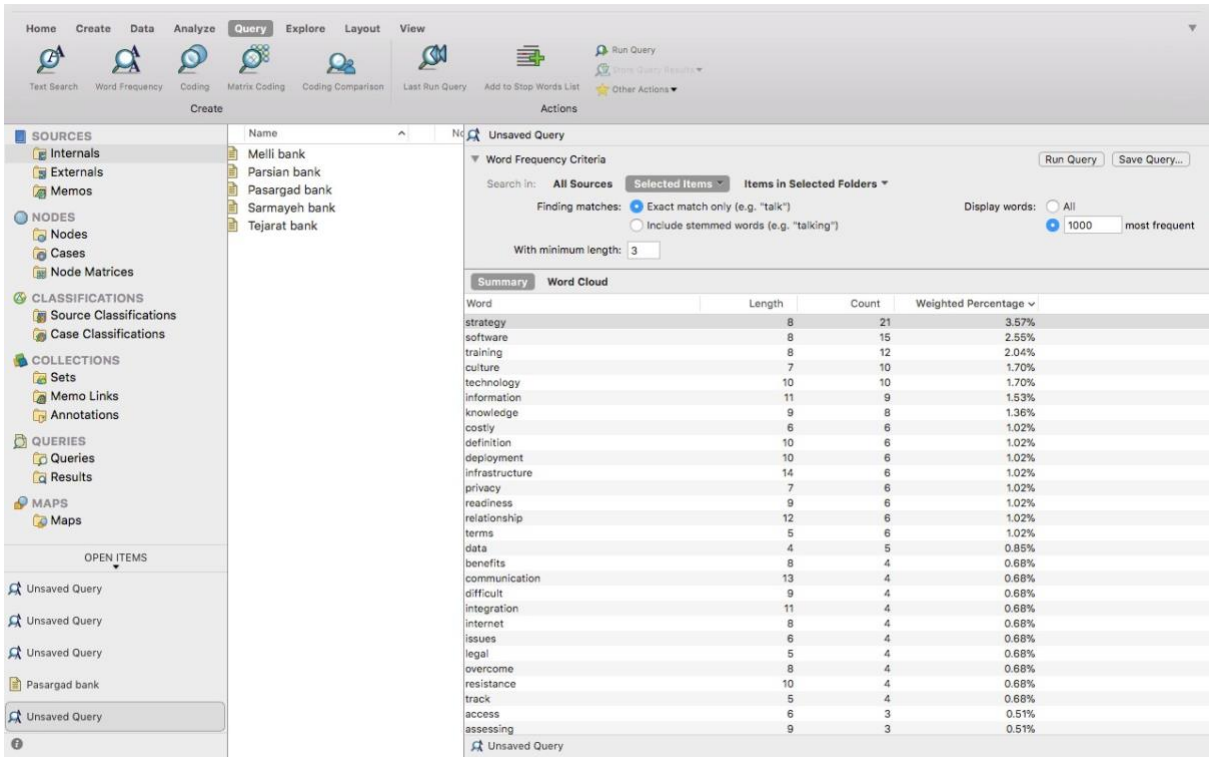


Figure 5-2: Word frequency

As mentioned, NVivo provides the ways to get a broad feel for what themes are in the data and enables managers to drill down into the material for more in-depth analysis. Furthermore, visualisation techniques can help to see patterns and explore connections in the data. One of the techniques in NVivo is word cloud that can help to visualise the results of a word frequency query and enable that to see potential themes that require further explanation and in this study eCRM readiness dimensions. Figure 5-3 illustrates the managers of Melli bank interviews analysis using word cloud. As can be seen, the strategy is the most frequent word in their interviews, which shows the importance of strategy dimension for eCRM readiness.

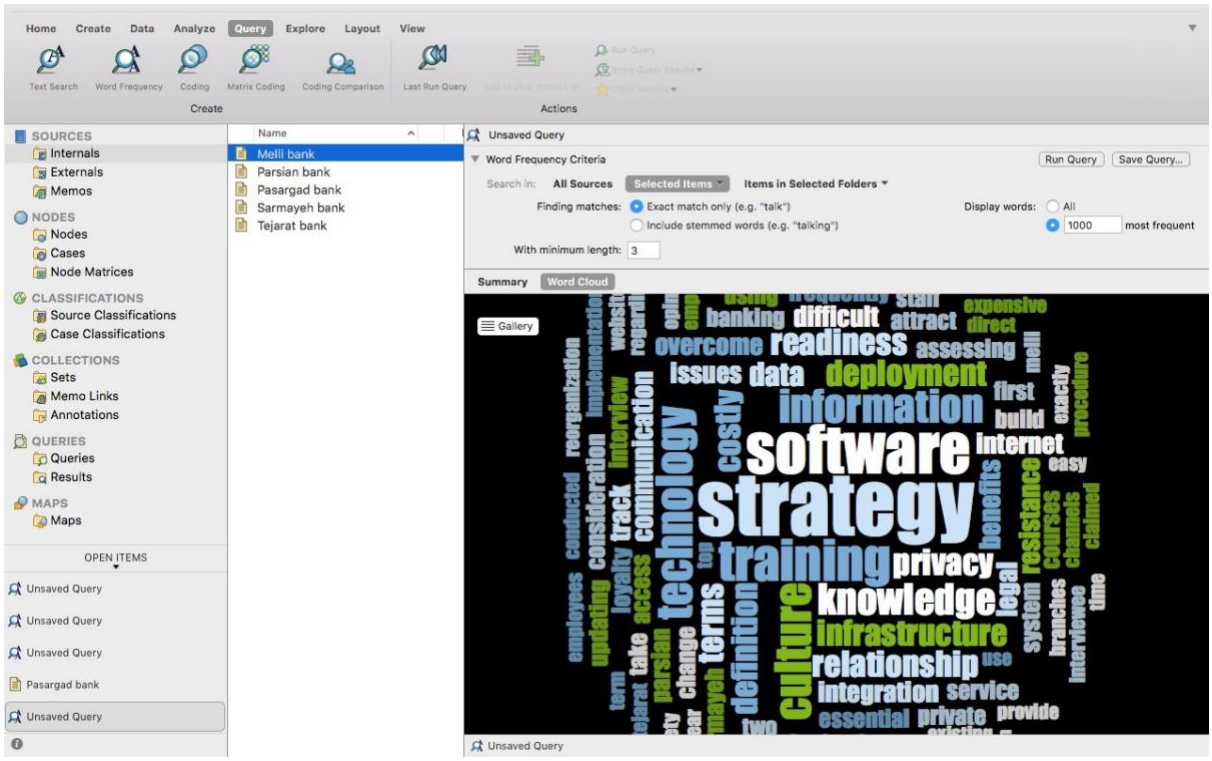


Figure 5-3: Word cloud

Another analysis which is used in this study is cluster analysis. The cluster analysis is an exploratory technique that enables the researcher to visualise patterns in this study by grouping cases that share similar words, i.e. the cases that are coded similarly by nodes. This analysis helps to identify cases that are similar, based on the occurrence and frequency of words. The cases that appear close together are more similar than those are far apart. As can be seen in Figure 5-4 and Figure 5-5, the diagram tab displays the visual representation of the data.

Furthermore, the summary tab in NVivo displays the similarity index values used to generate the cluster analysis diagram. Items with high similarity index (maximum=1) indicate a substantial similarity and are displayed closer together on the cluster analysis diagram. In this study, the results show that Parsian and Melli banks have the highest correlation (0.842) compare to others.

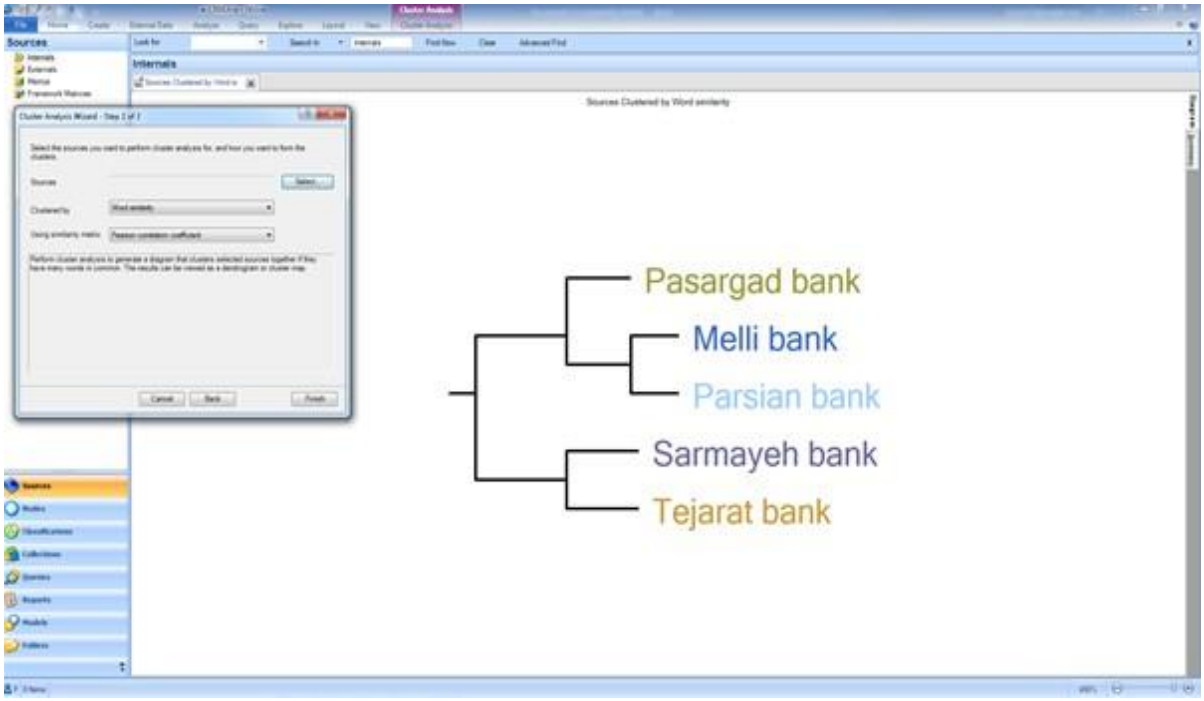


Figure 5-4: Cluster analysis

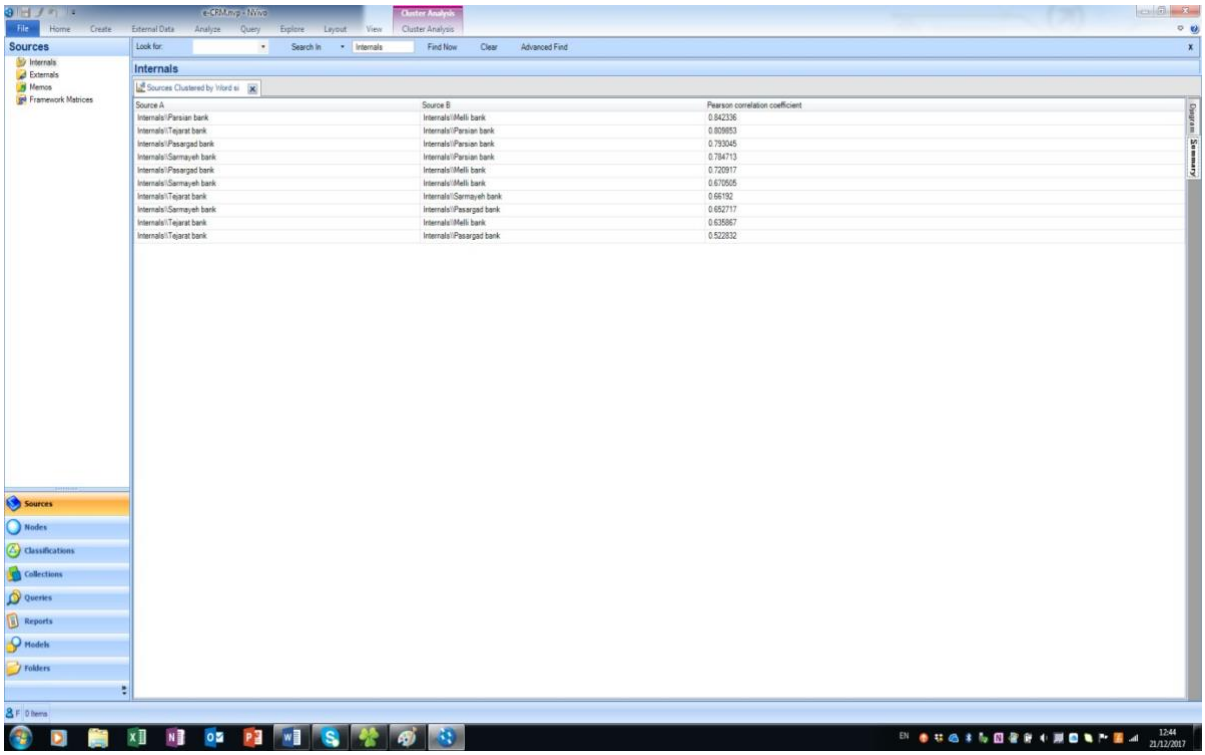


Figure 5-5: Correlation between sources

The next analysis is word trees, which displays the results of a text search query as a tree with branches representing the various contexts in which the word or phrase appears (Figure 5-6). The word trees allow the researcher to compare the different ways that bank interviewees talked about an eCRM readiness.

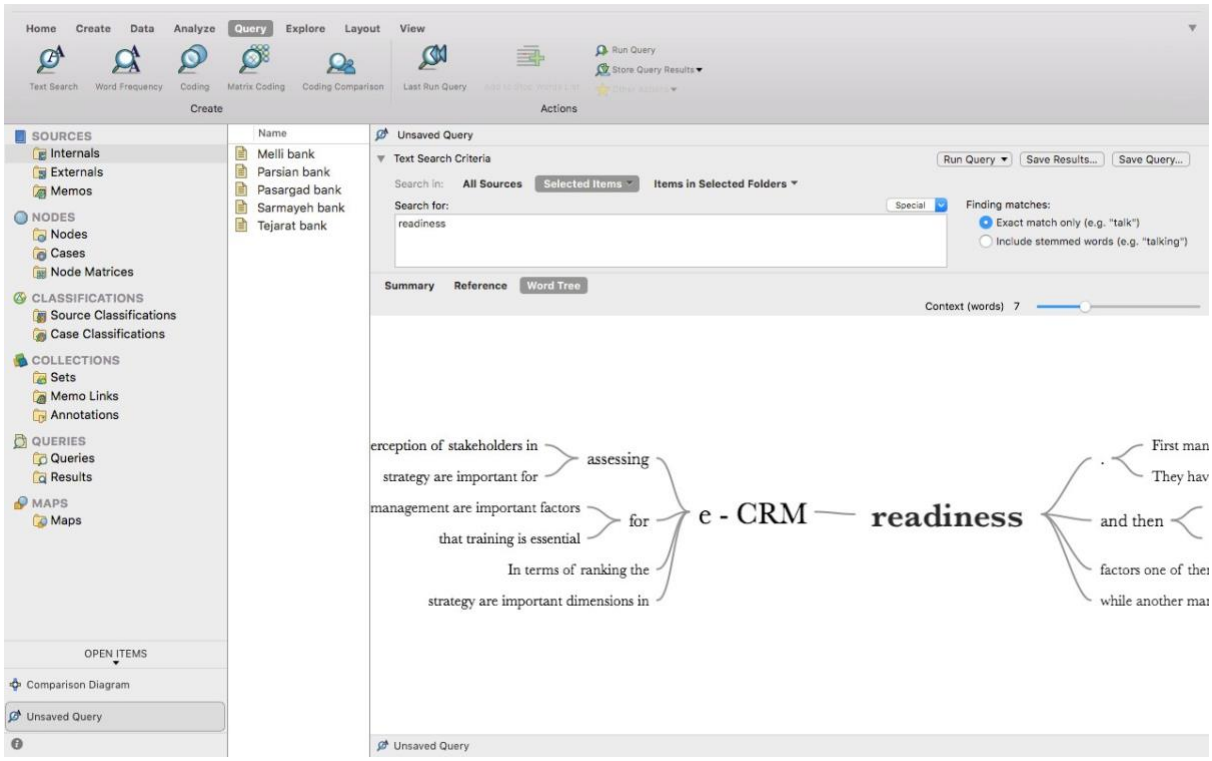


Figure 5-6: The word trees

The final step is to explore the diagrams. An explore diagram focuses on a single case and all items connected to it will be revealed. Displaying connected items helps to visualise connections between research items. The diagram is dynamic, so it allows the researcher to select any of the connected items and refocus the diagram on that item, generating a new diagram with all of its connected items. In other words, this diagram is designed to help researchers step forwards and backwards through their data, exploring connections between their dimensions. Figure 5-7 shows the explore diagram for one of the banks (Melli bank), which helps to visualise connections between eCRM readiness dimensions and bank manager perspectives.

As discussed, interviews with ten managers of five case study banks in Iran were summarised in this section. Each manager discussed their views regarding eCRM and questions which were created for this research. Both managers of public and private banks were surveyed in this study to determine the dimensions affecting eCRM readiness in Iranian banks.

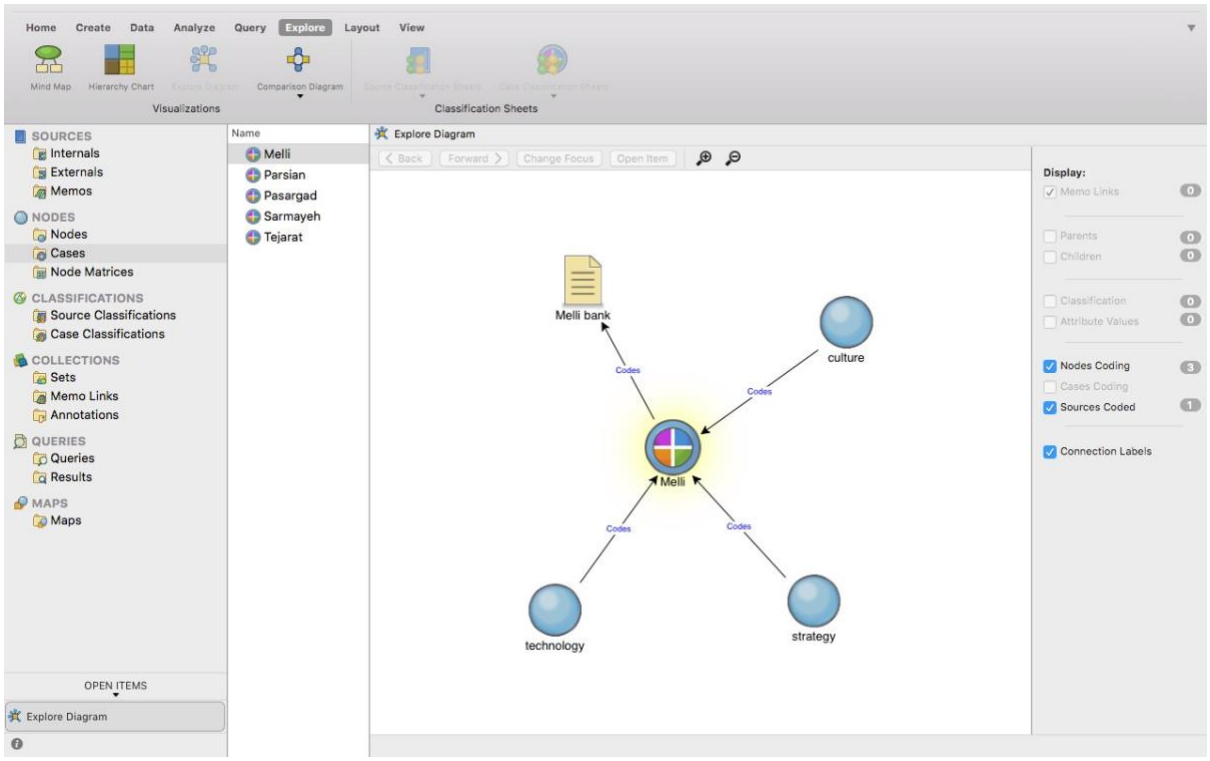


Figure 5-7: The explore diagram

Most the managers understood the meaning of eCRM and what the benefits of eCRM are to banks and customers. Specifically, private banks managers have more understanding of eCRM compared to public bank managers. The reason can be because the state banks' recruitment process is different to that of private banks, and they are more likely to consider experience rather than skills. In general, there is a good understanding of the definition and benefits of e CRM in both private and public banks.

Based on data from interviews, the organisational culture was proven as a most important factor among the three factors. They agreed that without having a good culture in a bank, it is impossible to deploy eCRM. Banks need to develop a customer-oriented culture to meet customer expectations and implement customer relationship strategy.

All managers confirm that top management support is crucial in eCRM success. They stated that eCRM managers need to protect employees when difficulties occur. Support can be anything from funding, communication, or resources from top management. One of the managers claimed that 85% of eCRM failures in Iranian banks are due to the lack of senior management support. They believe that managers need to focus on ultimate goals rather than only technologies. In addition, they stated that managers advocate and fund eCRM initiatives, illustrating the important role of management support in eCRM success.

They stated that the role of people is important in eCRM deployment and all managers agree with the importance of training. However, in one of the public banks, one of the managers believes that to reduce cost they need to recruit skilled staff, but most managers understand that eCRM is not just technology; it is about people using it. They believe that people should be building relationships with customers, not just technology itself. They concluded that this training is important for all staff, who have the same well-defined goals. Finally, they stated that systematised and ongoing training can guarantee eCRM success and staff need to be trained consistently to provide better customer service and customer satisfaction.

The majority of decision makers agree that resistance to change is one of the factors to eCRM failure. One of the managers stated that eCRM implementation moves employees away from their comfort zone, and therefore any implementation needs caution. They stated that any change needs a plan, good communication, develop employee's skills, and change readiness assessment. This result shows that resistance to change is an important factor in eCRM readiness and banks need to overcome this by change management planning and execution.

Most managers agree that eCRM strategy is an important factor in eCRM success. One of the managers claimed that 52% of failures in eCRM implementation in banks relate to inadequate strategies. They stated that an eCRM strategy identifies the goals and shows where the bank wants to go, beginning with consideration for the range of capabilities that the bank has. Most of the managers are aware that customers are at the heart of eCRM strategy, not the products or services. Therefore, this is evidence of the importance of strategy for eCRM readiness by decision makers' perspectives in Iranian banks.

IT policy is another vital eCRM readiness factor. All managers agree that there is an IT policy in their bank that helps their bank to make better use of IT and protect it from unnecessary costs, security risks and legal problems. Therefore, developing an eCRM strategy is critical as eCRM is much than just a technology initiative. ECRM strategy helps banks to identify, differentiate and segment customers and also to help them to design customer-centric processes that will bring in new customers and effectively service existing ones.

They stated that IT infrastructure in banks is important for the success of eCRM. IT infrastructure consists of equipment, software, hardware and services used in common across a bank. They stated that IT integration with eCRM is costly, but it is valuable. One of the managers stated that websites and eCRM integration help banks to automatically

bring invaluable customers and streamline the sales or service process. They stated that banks need to maintain customers, and this means more information from customers which can be achieved by eCRM integration to capture this information and engage with customers effectively.

Accordingly, they stated that channel integration helps channels work well together, complements each other and, importantly, provides the same experience to customers. One of the managers stated that, based on customers selected or preferred channel, banks could interact with them, provide the service, and understand their needs. However, they mentioned that this is costly and needs reorganisation. This result illustrates the importance of the technology dimension for eCRM readiness. In addition, customer choice for channels gives them the confidence to select, but banks need to take into consideration that they do not offer channels that they are not good at.

In terms of employees' eCRM perception, they stated that it is important for the bank to have reliable employees, who affect performance and ultimately customer satisfaction. They stated that bank employees need to be aware of products and services, respond to customers promptly and with accuracy, and show appreciation to customers. This can be measured just by asking customers' perception regarding their bank.

This result from the interpretation of interviews shows that organisational culture, strategy and technology are the main dimensions for eCRM readiness in banks, based on decision-makers' perspectives of five case study banks. The next step is to validate the empirical data, which is discussed in the next section.

5.6 Validity and Reliability

According to Gibbs (2007), qualitative validity means that the researcher checks for the accuracy of the findings by employing specific procedures, while qualitative reliability indicates that the researcher's approach is consistent across different research and projects. According to Creswell (2014), the researcher can use approaches to convince the reader of the accuracy and to assess the accuracy of findings. These strategies are triangulation, use member checking, an external auditor to review the project or prolonged time spent in the field.

For this study, the triangulation strategy was employed in order to validate the findings. Triangulation is a powerful strategy that facilitates data validation through cross verification

from two or more sources. In other words, it refers to a combination of several research methods in the same study. In this particular research, it means the combination of qualitative and quantitative data for determining eCRM readiness dimensions in banks.

As the data for this research was collected through multiple resources, interview and questionnaires, the researcher can ensure internal validity. Furthermore, findings were checked and discussed by five eCRM experts, four academics in marketing and information systems field, and five bank managers. This process again provided validity to the findings of this research.

Regarding reliability, it is necessary for the researcher to check whether the selected approaches are reliable. According to Gibbs (2007), a researcher needs to check the transcripts to make sure that they do not incur any mistakes during transcription and coding. In this research, three techniques were employed for ensuring reliability. First, the researcher was provided with a detailed account of the focus of study which is identifying the main eCRM readiness dimensions in the banking industry, the researcher's role and the context in which data was collected.

According to Yin (2016), the researcher can check reliability by documenting the procedures of case studies. One of these procedures is to make sure that there is no drift in the definition of codes (Gibbs, 2007). Second, triangulation which strengthens internal validity, as well as reliability (Creswell, 2014) and, finally, data collection description is used in order to provide an accurate and good picture of methods used in the research. All phases in this study were discussed with expert scrutiny, which validated the findings. In addition, all findings for qualitative research were reported descriptively and narratively, rather than as a scientific or statistical report.

5.7 Summary

This chapter explored the dimensions affecting eCRM readiness in Iranian banks by surveying bank managers and decision makers. In this chapter, the qualitative approach and qualitative design for this study were discussed. Data collection methods and data analysis were discussed. All findings from five case study banks regarding the proposed conceptual framework dimensions, illustrate the importance of these variables. The evidence of case study banks provides sufficient support for strategy dimension importance in eCRM readiness before the

implementation phase, which included overall plans and goals at the banks. With respect to the technology dimension, it has been found that the proposed dimension was applied in banks, and bank managers were aware of technology importance for the readiness of eCRM. In the next chapter, a proposed readiness/maturity tool is discussed.

Chapter 6

eCRM Readiness and Maturity Assessment Tool

Chapter 6

6. eCRM Readiness and Maturity Assessment Tool

6.1 Proposing an eCRM Readiness/Maturity Tool

This chapter describes the proposed tool and demonstrates what it does. After proposing the eCRM readiness and maturity models, in order to facilitate the assessment of readiness and maturity, an integrated eCRM readiness/maturity tool was created to ease the process of appraisal of eCRM within a bank. In other words, the framework was transformed into a practical tool and tested in banks. The proposed Excel tool has three parts: pre- readiness, readiness, and maturity. The Tejarat bank is the example scenario to describe the proposed tool.

6.1.1 Pre-readiness

For the first part of this tool, pre-readiness, eCRM readiness is predicted based on managers' decisions on the importance of each dimension and factor. The AHP approach was chosen for this pre-assessment step. This stage can reveal the status of each dimension and its associated factors. As mentioned, this technique is based on mathematics and is structured for complex decisions. As can be seen in Figure 6-1 (Tejarat bank), a pairwise comparison matrix for all dimensions is constructed. This matrix compares the importance of main dimensions with each other. Also, there are three more tabs for corporate strategy, technology, and organisational culture dimensions. In each tab, there is a pairwise comparison matrix that the factors of the relevant dimension are compared. All these pairwise matrices must be filled separately.

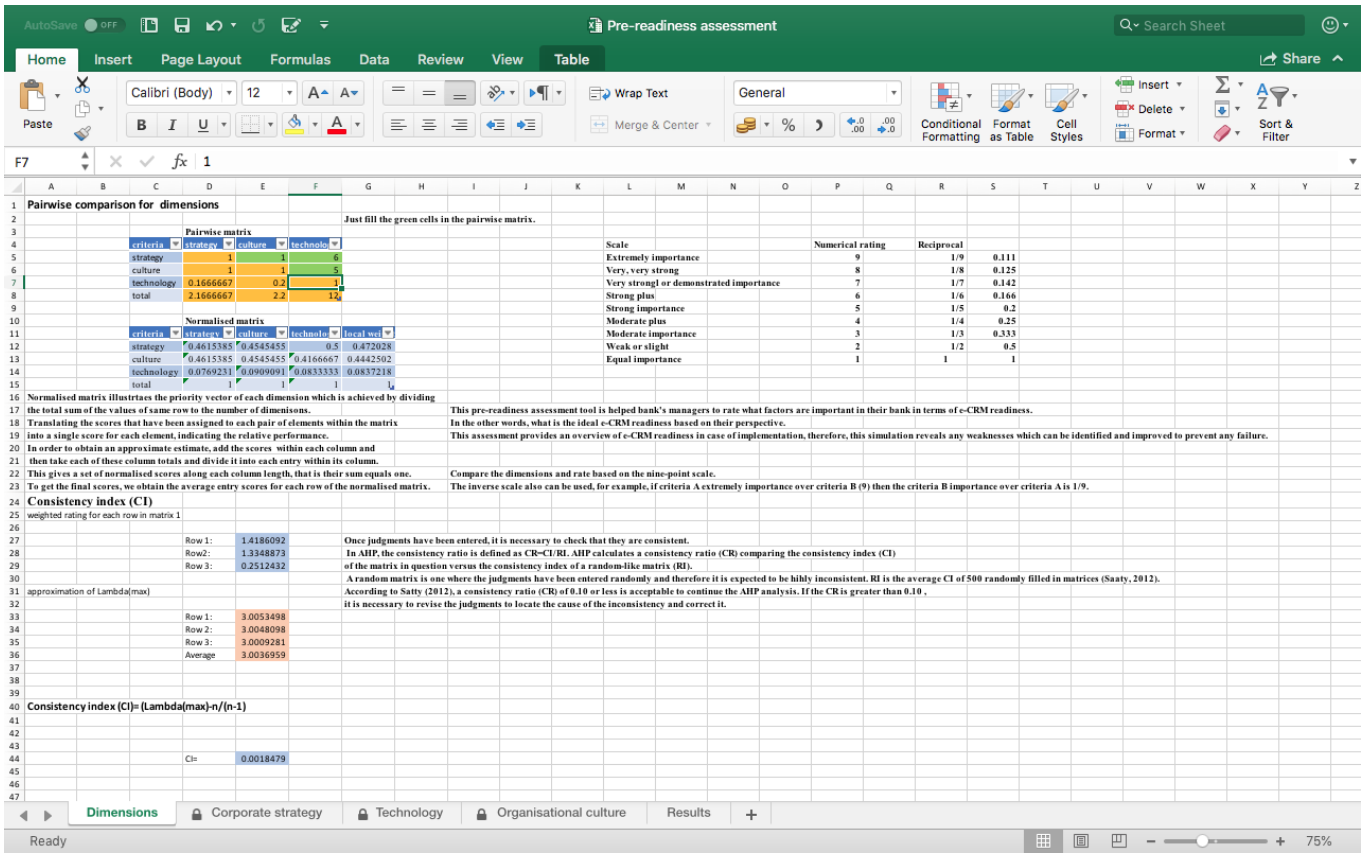


Figure 6-1: Pre-readiness assessment

As can be seen in Figure 6-1, the AHP nine-point scale is used to assign a relative degree of importance between dimensions or factors. These matrices help to reflect the importance of one-factor compared to another factor in the same dimension. In order to prioritise and rank factors and dimensions which is the purpose of this study, it is necessary to get the weight of each dimension and factor. Therefore, in order to find the local weights of each dimension and factor, a normalised matrix for each tab is created (Figure 6-1). Normalised matrix illustrates the priority vectors based on mathematical formula (chapter 5).

The result (Figure 6-1) shows the priority of dimensions based on decision makers decision for Melli bank. After inserting the rate from the score table in the yellow areas, the reciprocal, normalised matrix, and consistency ratio will be calculated immediately for each dimension and factors. As can be seen in Figure 6-2, it is essential to check the consistency of judgments to ensure a reasonable level of consistency. Therefore, based on the formula (Chapter 5), the consistency index and ratio are calculated. If CR value turns to green, then it means that the judgments are consistent. This calculation helps to accept the priority vectors.

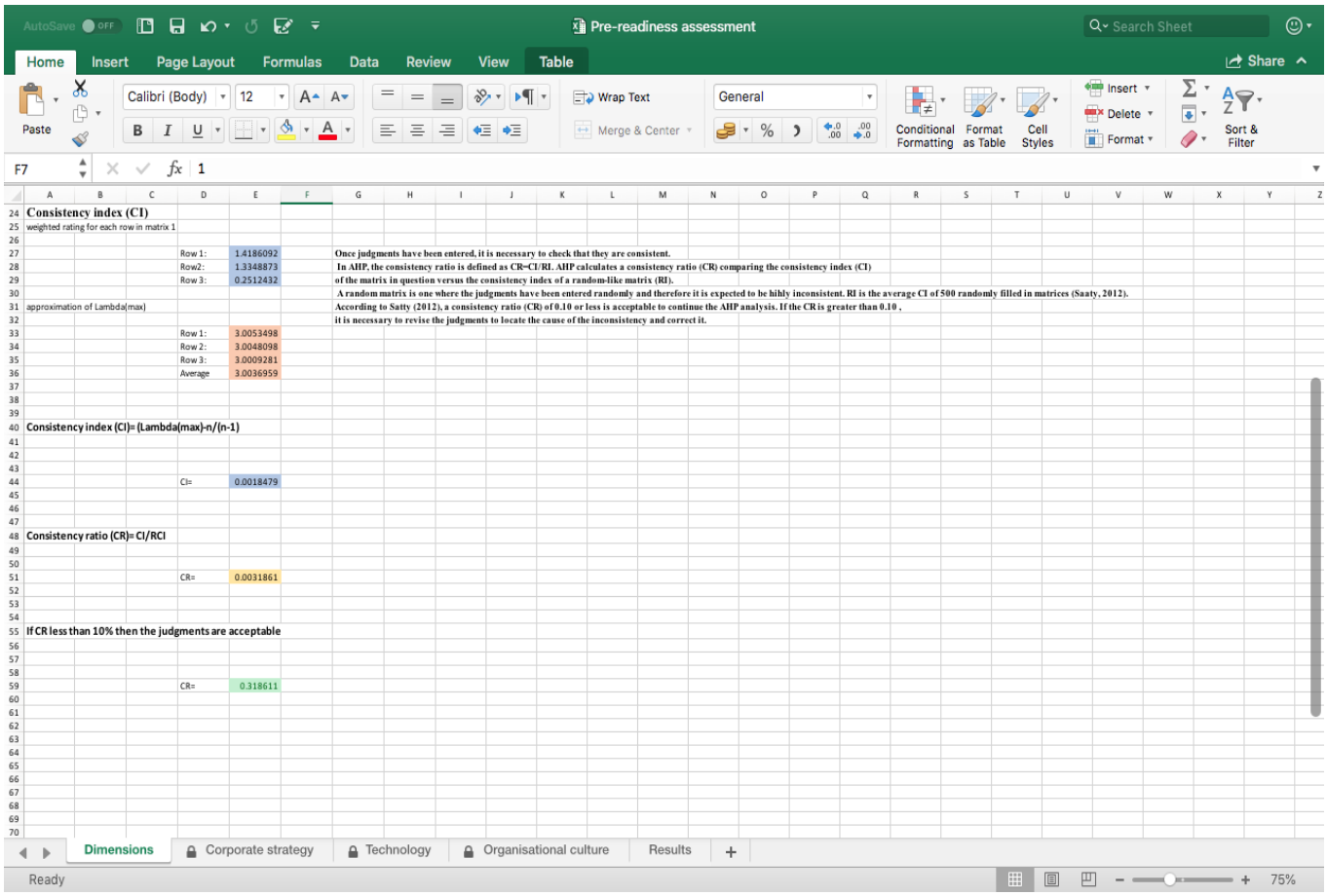
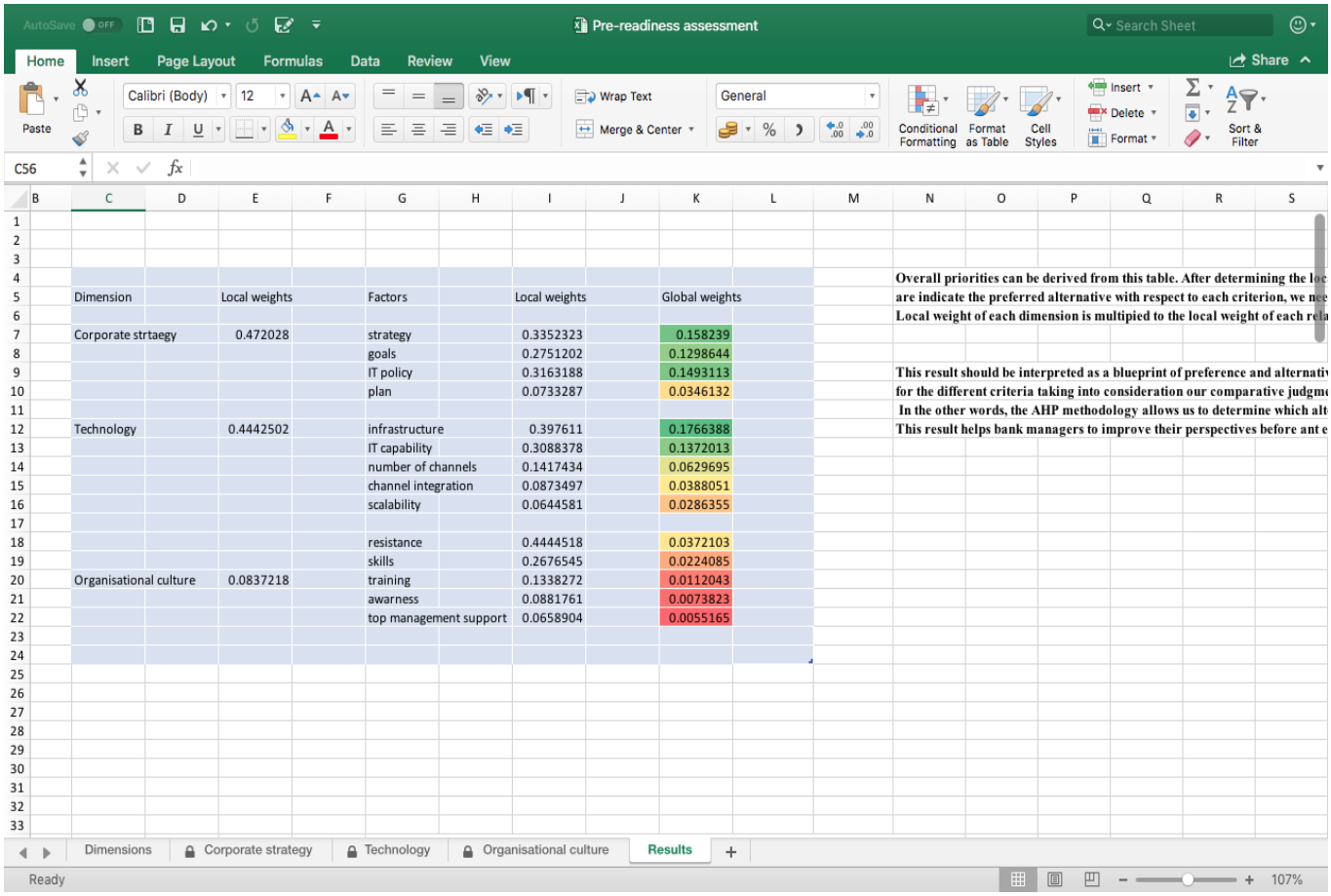


Figure 6-2: Consistency ratio

Finally, as can be seen in Figure 6-3 and Figure 6-4, the results tab will illustrate the priority list and radar chart. Overall priorities can be derived from this table. After determining the local weights for dimensions and factors which indicate the preferred alternative for each criterion, the overall priority or global weigh for each alternative should be calculated. As can be seen in Figure 6-3, based on the calculation (Chapter 5) the colour scale was shown. This result help bank's managers to improve their perspectives before eCRM deployment and recognise their weaknesses to prevent any failure in future.



Dimension	Local weights	Factors	Local weights	Global weights
Corporate strtaegy	0.472028	strategy	0.3352323	0.158239
		goals	0.2751202	0.1298644
		IT policy	0.3163188	0.1493113
		plan	0.0733287	0.0346132
Technology	0.4442502	infrastructure	0.397611	0.1766388
		IT capability	0.3088378	0.1372013
		number of channels	0.1417434	0.0629695
		channel integration	0.0873497	0.0388051
		scalability	0.0644581	0.0286355
		resistance	0.4444518	0.0372103
		skills	0.2676545	0.0224085
Organisational culture	0.0837218	training	0.1338272	0.0112043
		awarness	0.0881761	0.0073823
		top management support	0.0658904	0.0055165

Overall priorities can be derived from this table. After determining the lo
are indicate the preferred alternative with respect to each criterion, we n
Local weight of each dimension is multipied to the local weight of each re

This result should be interpreted as a blueprint of preference and alternati
for the different criteria taking into consideration our comparative judgm
In the other words, the AHP methodology allows us to determine which alt
This result helps bank managers to improve their perspectives before ant e

Figure 6-3: Global weights for pre-readiness assessment

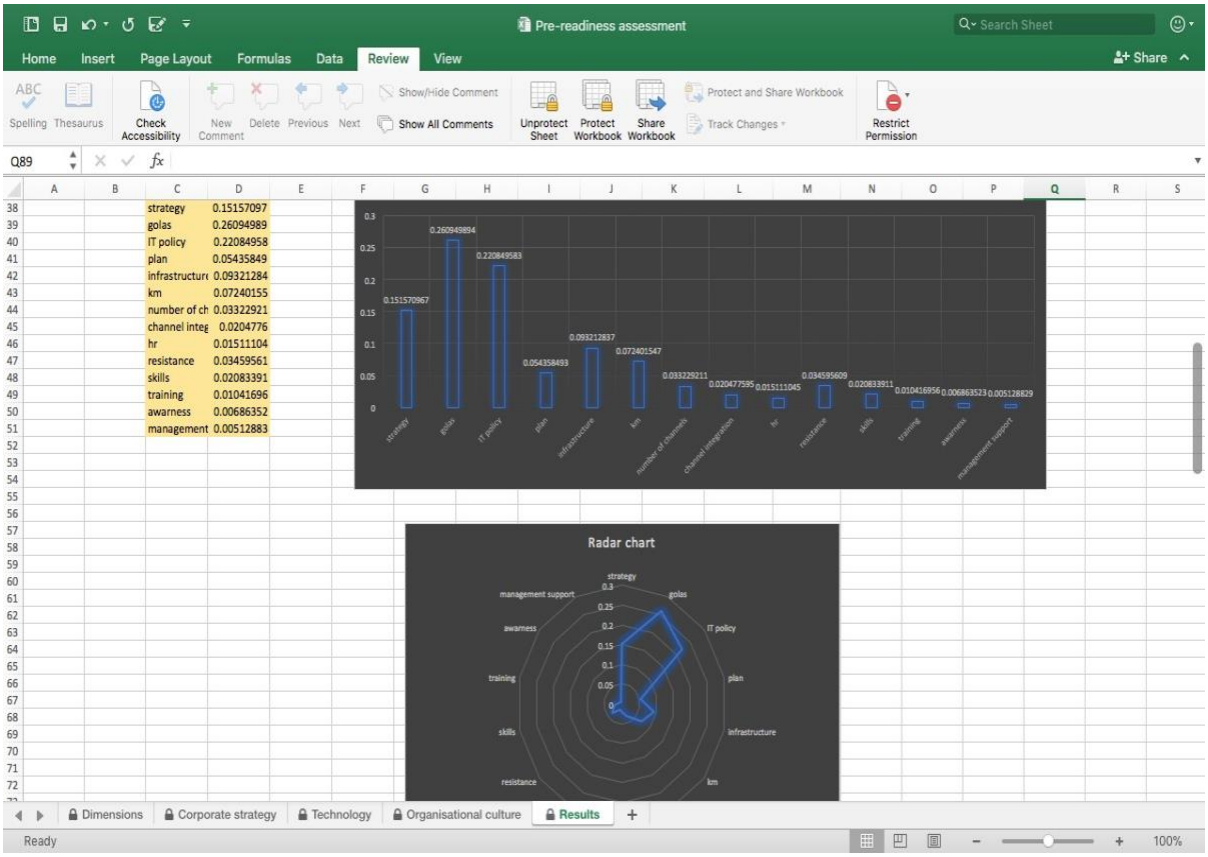


Figure 6-4: The radar chart for pre-readiness assessment

6.1.2 Readiness assessment

The next part is to assess readiness, and this helps banks to assess their readiness level compared to the readiness global index (RGI). As discussed before, RGI for each factor was obtained from experts' perspectives. The proposed tool is based on three eCRM readiness dimensions and can be ranked on a scale of 1-5 (Figure 6-5).

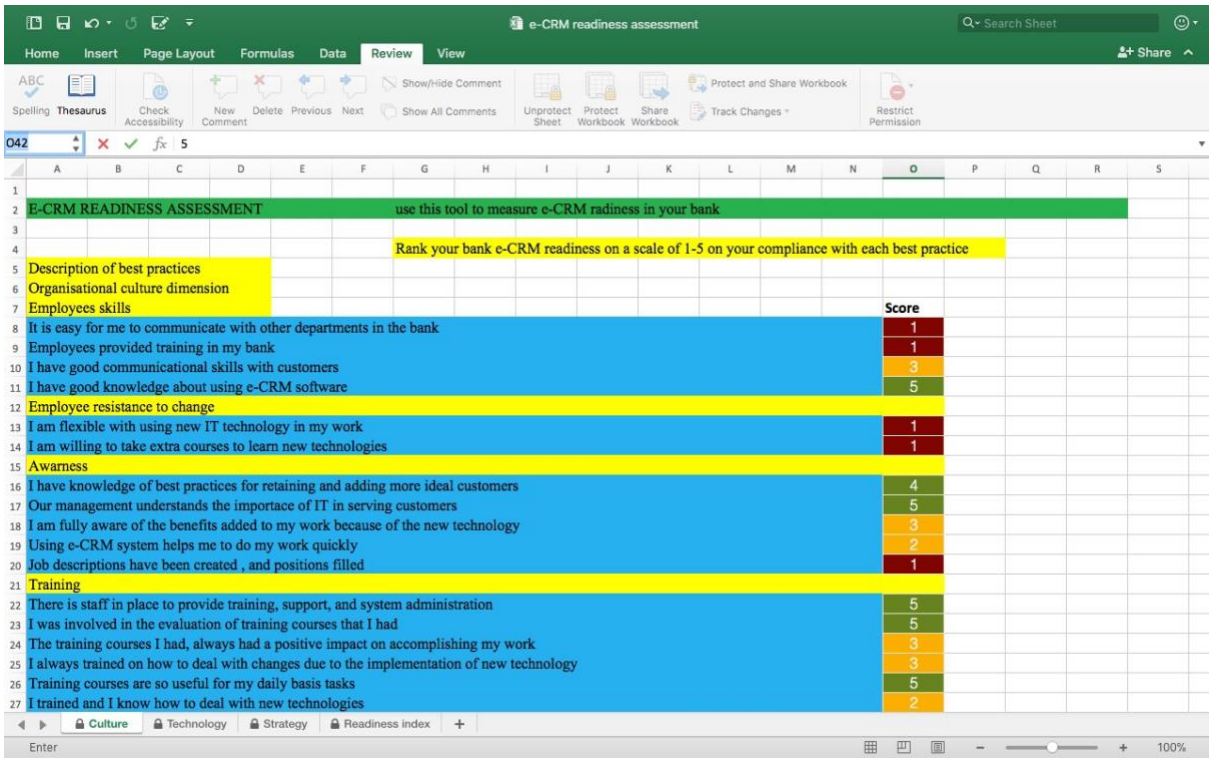


Figure 6-5: Readiness assessment tool

As can be seen in Figure 6-6, this tool allows banks to evaluate their eCRM readiness across important dimensions and compare their status on a global scale, based on experts' perspectives. Furthermore, this tool provides banks with a visual representation so that the result can be easily communicated with key members of their teams.

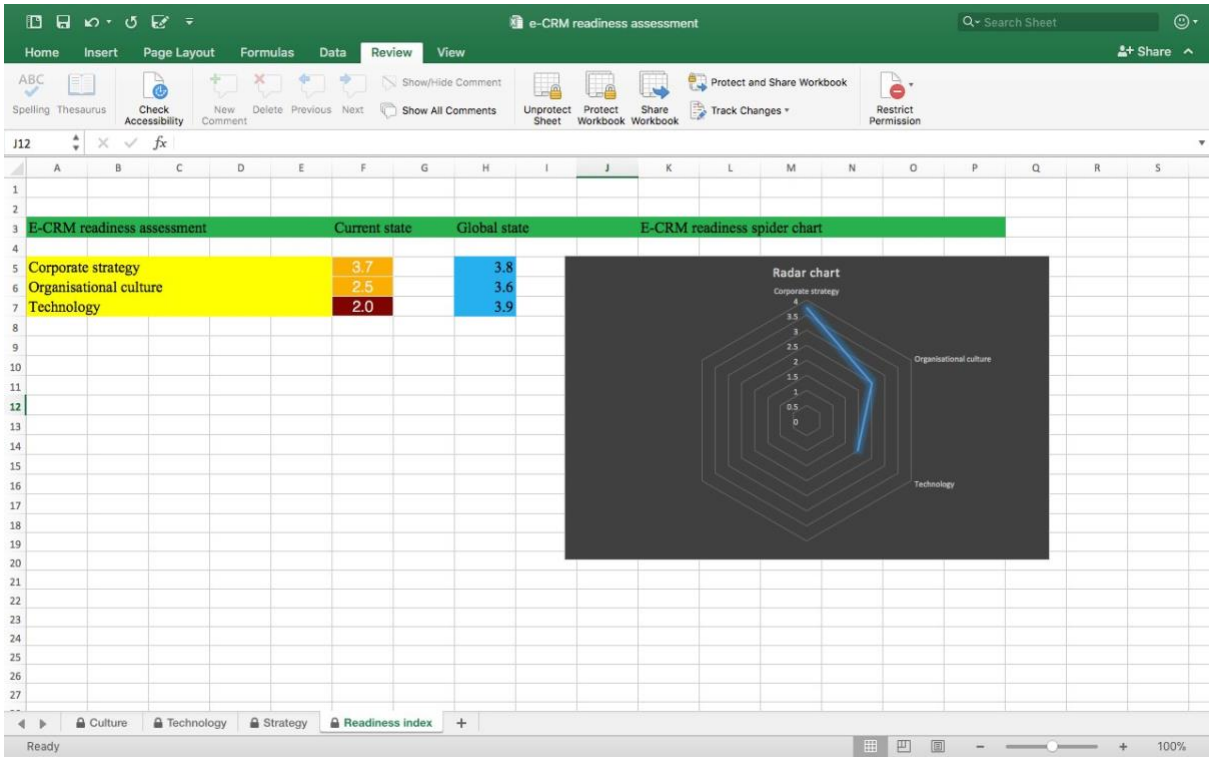
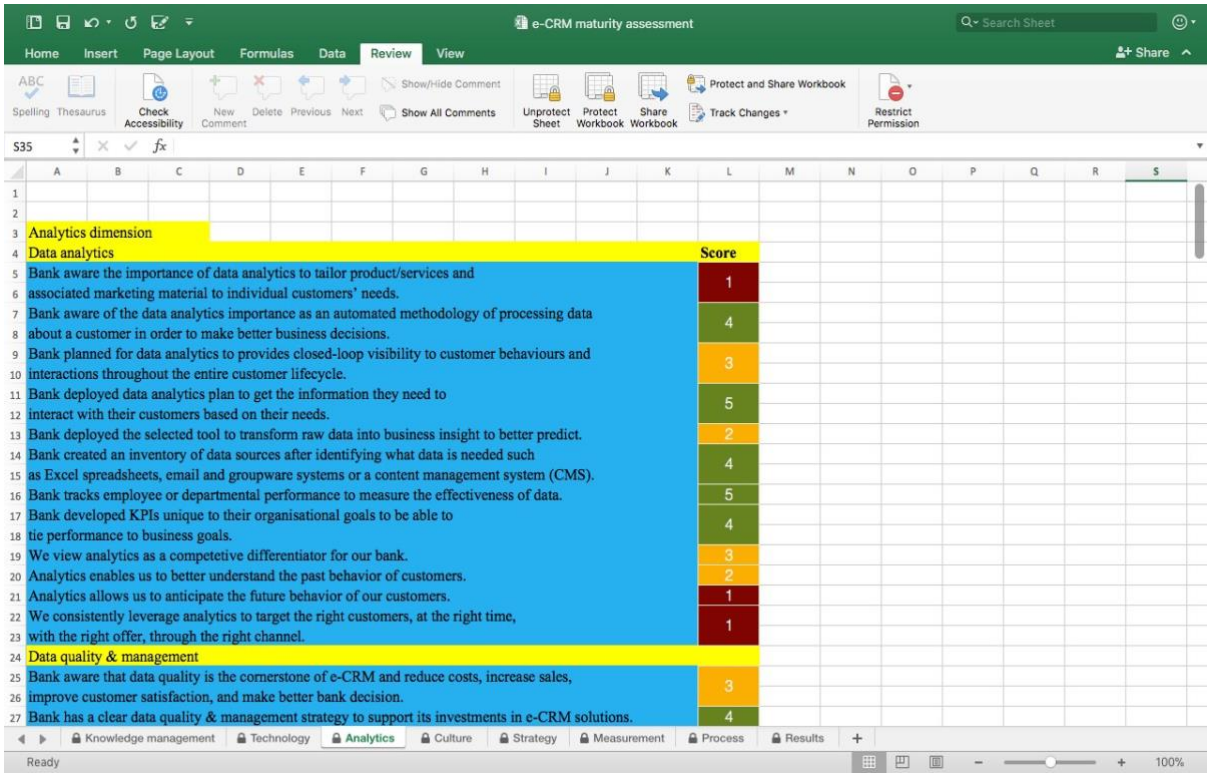


Figure 6-6: Readiness index

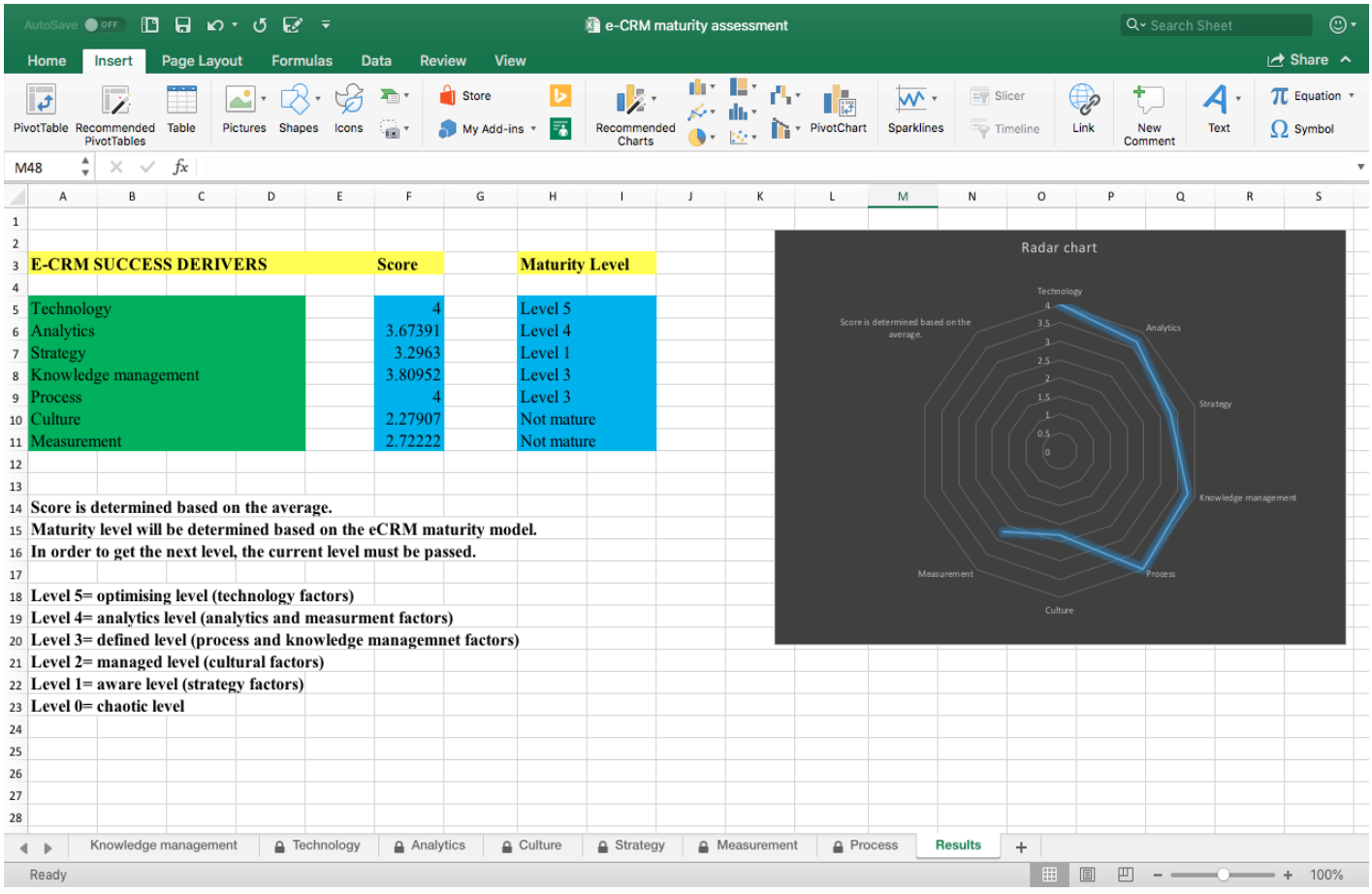
6.1.3 Maturity assessment

Finally, as can be seen in Figure 6-7, the next assessment is the post readiness assessment or maturity assessment. In this part, the maturity of eCRM is assessed. This assessment is crucial as banks need to consider all aspects related to the eCRM and report and benchmark their current capabilities. This assessment tool helps banks to evaluate their eCRM maturity and enables them to rate their compliance with best practices across different dimensions and associated factors. As can be seen in Figure 6-8, the results tab illustrates the score of each dimension and the maturity level based on the proposed eCRM maturity model levels (Chapter 3).



Analytics dimension	
Data analytics	Score
Bank aware the importance of data analytics to tailor product/services and associated marketing material to individual customers' needs.	1
Bank aware of the data analytics importance as an automated methodology of processing data about a customer in order to make better business decisions.	4
Bank planned for data analytics to provides closed-loop visibility to customer behaviours and interactions throughout the entire customer lifecycle.	3
Bank deployed data analytics plan to get the information they need to interact with their customers based on their needs.	5
Bank deployed the selected tool to transform raw data into business insight to better predict.	2
Bank created an inventory of data sources after identifying what data is needed such as Excel spreadsheets, email and groupware systems or a content management system (CMS).	4
Bank tracks employee or departmental performance to measure the effectiveness of data.	5
Bank developed KPIs unique to their organisational goals to be able to tie performance to business goals.	4
We view analytics as a competetive differentiator for our bank.	3
Analytics enables us to better understand the past behavior of customers.	2
Analytics allows us to anticipate the future behavior of our customers.	1
We consistently leverage analytics to target the right customers, at the right time, with the right offer, through the right channel.	1
Data quality & management	
Bank aware that data quality is the cornerstone of e-CRM and reduce costs, increase sales, improve customer satisfaction, and make better bank decision.	3
Bank has a clear data quality & management strategy to support its investments in e-CRM solutions.	4

Figure 6-7: Maturity assessment tool



E-CRM SUCCESS DERIVERS	Score	Maturity Level
Technology	4	Level 5
Analytics	3.67391	Level 4
Strategy	3.2963	Level 1
Knowledge management	3.80952	Level 3
Process	4	Level 3
Culture	2.27907	Not mature
Measurement	2.72222	Not mature

Score is determined based on the average.
Maturity level will be determined based on the eCRM maturity model.
In order to get the next level, the current level must be passed.

Level 5= optimising level (technology factors)
Level 4= analytics level (analytics and measurment factors)
Level 3= defined level (process and knowledge managemnet factors)
Level 2= managed level (cultural factors)
Level 1= aware level (strategy factors)
Level 0= chaotic level

Figure 6-8: Maturity levels

This assessment tool comprises of three parts to assess eCRM pre-readiness, readiness, and maturity. The result from this tool shows that for Tejarat bank managers strategical and technological dimensions and factors are important but surprisingly, the readiness assessment illustrated that the technological dimension and factors are in the poor status. On the other hand, eCRM maturity assessment illustrated that cultural and measurement dimensions are not mature, therefore, despite having appropriate technological factors but the overall eCRM maturity is in level 1 and needs improvement.

To conclude, this tool helps to determine eCRM readiness status before any deployment based on managers' decisions. These decisions are based on which dimensions and factors are significant compared to each other. This assessment helps decision makers to modify and revise their decision in cases of any weaknesses, and importantly to implement eCRM wisely. Therefore, readiness assessment provides an accurate status of eCRM compared to global status. Finally, maturity assessment determines the level of maturity in banks in terms of eCRM deployment. Thus, this tool is easy to use, saves time, and provides useful information on best practices. In the next chapter, reflection on the framework, lessons learned, contributions to knowledge and research limitation are discussed.

Chapter 7

Conclusion

Chapter 7

7. Conclusion

Objectives of this chapter:

- Reflect upon the proposed framework
- Reflect upon aim and objectives of this study
- Discuss the contribution to knowledge
- Recommendation to banks
- Discuss the limitations and future work

The previous six chapters have covered different stages of the research into identifying the e CRM readiness dimensions and proposing the eCRM readiness and maturity assessment tools. This chapter concludes that the findings confirmed the research hypotheses and proved the viability of the proposed eCRM readiness and maturity framework derived from the literature.

This chapter summarises the previous chapters of the research by reflecting upon the aim and objectives and highlight the findings. This chapter answers the research questions, which were listed in Chapter 1 and discussed the contribution to knowledge of this research to the eCRM field, in both academic and practical terms. In addition, suggestions to banks, the lessons learned from the research, as well as the limitations that were placed on the research are discussed.

The purpose of this research was to identify the main dimension affecting eCRM readiness in the Iranian banking industry and then developing the eCRM readiness and maturity framework based on these factors. This framework helped the researcher to create eCRM readiness and maturity assessment tools to help banks to assess their eCRM readiness and maturity.

ECRM is not just technology; it is a combination of strategy and technology that helps to optimise customer loyalty, banks' success in finding competitive advantages and achieve a variety of benefits. ECRM deployment in banks is beneficial to both customers and employees by facilitating tasks for staff, and accessibility of customers' information to provide

customer satisfaction. Despite the advantage of eCRM implementation in banks, there is a very high rate of eCRM failure. Therefore, banks need to overcome barriers by assessing the main dimensions affecting eCRM readiness before any implementation to prevent any failure.

Given a problem as mentioned earlier, the aim and objectives of this research were presented. This research aimed to develop an empirically-based conceptual framework that explains what dimensions affect eCRM readiness and what is the maturity level of banks in terms of e- CRM. Based on the research aim, the objectives of the research were discussed, including the suggestion of effective eCRM readiness and maturity assessment tools. For this reason and to achieve the objectives of the study, the research questions were created.

By reviewing eCRM literature, identifying factors and building an initial framework, the researcher tested the preliminary framework by conducting empirical research in five case study banks in Tehran, the capital city of Iran. The analysis of data obtained helped the researcher to revisit the framework, answer the research questions, and create the eCRM readiness and maturity assessment tools.

The research used a mixed methods approach, which helped the researcher to decrease the bias and understand the problems. Mixed methods also allowed the researcher to analyse the employees' questionnaires and interpret managers' interviews in order to answer the research questions. This study collected all data from three private and two public banks in Iran in order to reveal the main eCRM readiness dimensions.

As this study was based on mixed methods, the combination of quantitative and qualitative approaches was used. This provides strengths and validation to the research. After identifying the population and understanding the sampling of the research, the survey instrument, which helped to measure the constructs in the proposed framework, was developed. In addition, all measures of this instrument were created, based on the researcher's understanding, adopted and adapted from existing studies.

The questionnaires for employees were designed to measure all factors. The questionnaire used a five-point Likert scale, in which the employees were asked how strongly they agree or disagree with the statements. The researcher made sure that there is no harm to any individual as a result of the survey, using ethical approval before collecting data. This study is considered as posing the minimal risk as the participants were bank stakeholders. In addition, in order to answer the research questions, three hypotheses created.

An appropriate number of questionnaires, based on sample size, were distributed among bank employees. This helped to reveal more understanding of stakeholder's perceptions regarding eCRM and factors affecting eCRM adoption in Iranian banks, which led banks to assess their readiness and maturity. Furthermore, conducting interviews with bank managers enabled a clear picture of decision-makers' perspectives to be gained, and importantly this result complemented the findings from quantitative data, providing more value to the research.

The proposed eCRM readiness and maturity in this research consists of three readiness dimensions, namely: organisational culture, corporate strategy, technology, and five maturity levels. Interpretation of results illustrated that all dimensions are important for eCRM readiness in Iranian banks and these dimensions should be used for assessing eCRM readiness status in Iranian banks or other countries with a similar culture.

Revisiting and confirming the proposed framework helped the researcher to create the eCRM readiness and maturity assessment tools. These tools were used to assess the eCRM readiness and maturity in one of the banks. The result helped the banks to understand their eCRM readiness status and the level of maturity. The findings also showed any weak areas in the bank which need improvement.

7.1 Research Questions

As mentioned before, in order to answer the research questions, three hypotheses were devised. Confirming these hypotheses using analysis of questionnaires and interviews data illustrated that three dimensions affect eCRM readiness in Iranian banks. As this research endeavoured to answer the main research question "What are the main dimensions that can be used to investigate the readiness of Iranian banks for eCRM adoption?", it can be concluded that corporate strategy, technology, and organisational culture are determined as the main dimensions for eCRM readiness in Iranian banks.

Furthermore, this research had two sub-questions, as follows:

- - How can eCRM readiness and maturity in banks be assessed?

➢ What would be an effective eCRM readiness/maturity assessment tool?

For the first sub-question, the dimensions and factors for eCRM success were extracted from literature review and questionnaire-based survey. These factors were allocated in the levels of eCRM maturity model. Some of these factors are the same as eCRM readiness factors, but some are identified as new factors, such as data analytics. These factors help banks to identify their maturity level and improve their eCRM.

For the second sub-question, based on the proposed framework, the assessment tools were created to help to determine whether a bank is ready for eCRM and, if it is ready, what the maturity level is. The tools allow users to evaluate eCRM readiness across three identified dimensions and also provide visual representation so that the result can be easily communicated with decision makers of banks.

7.2 Recommendations for Iranian Banks

This study illustrates that eCRM is a vital part of banks' operations. ECRM provides 360 degrees of customers' views of the entire bank, and this is no matter where the customers' touch points occurred or where the information resides. ECRM provides a better understanding of customers and insight into their needs as an important asset for banks. ECRM deployment in banks not only is beneficial for banks but it even provides a variety of benefits to customers, such as satisfaction and convenience. Therefore, eCRM implementation in Iranian banks is vital for their survival in competitive markets because nowadays it is difficult to compete only from products.

Given the advantages of eCRM deployment in banks, the following recommendations are listed for Iranian banks to take into consideration:

1. Iran has a population of over 82 million, with more than 60 public and private investment institutions. Recently, sanctions on some banks which stopped them doing business with Iran have been lifted and also some new banks have started operations. This means there is high competition in the market and high demand. Therefore, Iranian banks should equip themselves with eCRM to acquire new customers, retain existing ones, and maximise their lifetime value.

2. Banks need to be prepared for the organisational challenges they may meet. ECRM implementation needs a whole bank to be in synchronisation. Banks need to identify the goals or benefits they expect to get out of the eCRM, which needs a clear strategy. Therefore, banks need to create customer-centric cultures to secure their relationships with customers and to maximise customer profitability, which needs training, commitment and support. Thus, eCRM is much more a human function than a technology implementation and, if working well, will provide better customer service and discover new customers.

3. In order for banks to prevent any failure, they should assess eCRM readiness before any implementation. Most banks only invest significant resources and effort into their initiatives, but only a few take the time to determine whether they are getting the optimal return on their investment. ECRM readiness assessment is a cost-effective way to identify and resolve issues that may be hampering user adoption and payback from resources allocated to the eCRM initiatives. This assessment helps banks to identify opportunities to optimise current customer relationships and improve acquisition and retention performance.

4. The eCRM readiness assessment tool places emphasis on the importance of organisational culture, technology, and bank strategy. Therefore, banks should take a look at these dimensions and associated factors in order to assess the readiness situation for eCRM adoption.

5. Bank employees need to aware of strategies and policies. These should be developed based on customer-centric culture to produce higher profits. In order to have a winning eCRM strategy which is crucial for eCRM readiness, banks should set a destination, prioritise their customers, communicate with employees, stagger the changes, track customers before the first contact, synchronise everything in eCRM, and evaluate and improve. In other words, banks with an eCRM strategy place customers at the forefront of their business focus banks yet without a strategic plan are not aligned with the goals that they hope. Therefore, these goals needed to be fully integrated into the eCRM and eCRM strategy and revisited regularly to ensure that it is still fit for their purpose.

6. Another dimension is organisational culture for eCRM readiness in banks. Banks need to assure the cultural readiness of the bank to adopt a customer-centric approach, which is essential for eCRM success. One of the factors considered to influence eCRM adoption is user acceptance. This shows that people in the bank, who are willing to accept new change, are important for the adoption. The bank can gain an advantage over their competitors and advance innovation by recognising the strength of its culture, embracing learning cultures and accepting new activities.

7. Successful eCRM adoption depends on top management support and needs the understanding of eCRM. Managers and decision makers' positive attitude toward eCRM are more likely to help the bank achieve eCRM adoption. Another important factor is employee knowledge. Banks can achieve this by enhancing their employees' skills through training courses. Nevertheless, successful eCRM deployment depends on employees who understand the purpose of eCRM adoption and its role and contribution to banks. In other words, not only customers are assets for banks, but employees are also considered an important asset that impacts on the bank's performance.

8. Employees need to be informed of every step of eCRM implementation. This helps managers to overcome resistance to change in banks and communicate with staff properly. Technology is another important dimension for eCRM readiness in banks. The ability of bank to absorb, process, and present customer information depend on IT capabilities in the bank. IT capabilities refer to strategies and resources in the bank. ECRM innovation capability of a bank comprises infrastructure, number of channels, and integration between channels. In addition, the size of the bank plays a vital role in e-CRM adoption.

9. In order to improve eCRM readiness in Iranian banks, the researcher suggests that managers and decision makers adopt the eCRM readiness model as a guideline and also the eCRM readiness assessment tool as a tool for assessing eCRM readiness in the Iranian banking industry.

10. Furthermore, the eCRM maturity model is a guideline for assessing eCRM maturity in Iranian banks. Therefore, the researcher suggests banks should use the eCRM

maturity assessment tool in order to assess their maturity level and graduate to the next level.

7.3 Contributions of Research

The contributions made by this thesis emerge from different parts of this work. Such contributions include the contextual information provided in Chapters 1 and 2, the development of the conceptual framework in Chapter 3, the design and conduct of case studies in Chapters 4 and 5, and finally the empirical analysis of the cases studies presented in Chapters 5 and 6. The work in this thesis has made a new contribution to the eCRM with the concentration in eCRM readiness and maturity in the banking industry.

The first contribution of this thesis is discussing and contributing to the identified gap in the literature concerning the issues in eCRM deployment, with regard to eCRM success and failure factors. The literature on eCRM readiness is rich in developed countries and the number of models introduced to prevent eCRM implementation failure. However, none of these models is comprehensive in terms of factors and also none of them is evaluated in the Iranian banking industry as a developing country. In addition, literature in terms of eCRM maturity is weak and requires more study.

Hence, this study addresses these issues by providing and developing a conceptual framework for assessing eCRM readiness and maturity and accordingly proposes a number of tools for facilitating the assessment process. Despite the global nature of the eCRM concept, unfortunately, the effort that has been put into studying eCRM readiness and maturity in Iran and developing countries is little. Moreover, this thesis recognises the need to address eCRM readiness and maturity tools through developing and evaluating a conceptual framework to overcome any failure.

In addition, the proposed conceptual framework and eCRM readiness and maturity tools attempt to overcome the limitation of the previous attempts to manage the problem of eCRM failure by integrating eCRM success factors. This framework and tools evaluation in Iranian banks overcome the lack of attempts to develop and evaluate eCRM readiness and maturity frameworks in developing countries. These tools enhance the success of eCRM deployment in banks and increase revenues and customer satisfaction.

7.4 Reflection on the research process

This section describes the procedures followed and difficulties that the researcher encountered. As mentioned in section 1.7, this study was followed the sixteen research process stages. After following these steps, it is necessary to offer a general idea of the several issues that the author had to tackle. Therefore, it is important to mention things that emerged during study and make some comments on how this study conducted in practice.

This study followed the sequence of stages but with a few exceptions. The second stage of the research process was about identifying factors affecting eCRM readiness and maturity. After identifying readiness factors from literature, the author realised that some other important factors such as social eCRM were not mentioned in the existing literature and it is necessary to confirm the importance of this factor for eCRM maturity and success. On the other hand, as eCRM is a new concept in Iran, the importance of this factor could not be extracted from Iran; therefore, the researcher decided to test this factor in the UK. Therefore, another study was conducted in parallel with the main study in order to confirm or reject the importance of new factors for maturity. In addition, Middlesex University London was chosen as there were eCRM support and the data could be collected easily for this study.

Conducting the empirical research was difficult as it needed the permission from five case study banks. This process was time-consuming and stressful. Collecting the questionnaires was also time-consuming as the questionnaires had to be collected from different locations and different banks but having help from some friends made it easy to reach more respondents.

The analysis of the questionnaires was time-consuming, as the author had to learn statistical analysis tests and compare which one to apply. On the other hand, the researcher had to learn SPSS along with getting consultation from a number of statisticians. Furthermore, interview with bank managers was time-consuming as it needed to make an appointment with managers. This process all conducted by the researcher.

Data analysis illustrated that strategy, technology, and cultural dimensions influence eCRM readiness. Furthermore, interpreting the analysis of bank managers helped to confirm the conceptual model leading to holding on in the revised model as presented in the proposed

conceptual framework section. Therefore, this finding was worthwhile, because it helped to get better and more in-depth knowledge and understanding regarding the managers and employees' perspectives who are two main eCRM stakeholders representing the banking industry. In addition, both perspectives were subsequently combined to produce the Iranian's bank perspective, which reflects the actual situation.

After developing an integrated eCRM readiness/maturity framework, the AHP and RADAR logic methods were applied to assess readiness and maturity and accordingly, the assessment tool was created and proposed to ease the evaluation process for managers. Finally, after the long process of data collection and analysis, the author was ready to write up the final version of the thesis.

Implication of This Research The findings of this study have identified some implications which are considered the reason for adopting, such as framework, and the advantages of this framework compared to other frameworks. First, the conceptual framework developed a list of eCRM readiness and maturity factors that are associated with the causes of eCRM failure. The literature widely accepts all these factors. Measuring these factors can help the banks to assess readiness before deployment, monitor and evaluate maturity, and improve their eCRM. In addition to emphasising the role of readiness and maturity factors, the proposed framework provides a guideline for eCRM implementation.

7.5 Limitation of This Research

The development of the conceptual framework was based on the evaluation of the previously presented frameworks that were available during the time of conducting this research. Although this research provides an approach to solving the eCRM deployment issues, which was not analysed until now, there are still a number of limitations of this research which are listed below:

- The findings of this research focus on only the banking industry, and it would be comprehensive and beneficial if other industries were investigated.
- This research focuses on only internal dimensions, with factors such as governmental factors not discussed. It would be valuable to investigate some external factors that might affect eCRM readiness and maturity.
- The target population of this study was five case study banks in Tehran, the capital city

of Iran. It would be better to investigate other cities banks which provide useful insight and analysis.

- A cross-case analysis would be useful for comparing different countries in order to find similarities and differences.
- Due to the limited number of banks which deployed eCRM, participation was limited.

7.6 Future Research Directions

The eCRM readiness and maturity framework was developed for eCRM deployment mainly on the basis of previous theoretical frameworks presented in the literature of developed context and then evaluated in Iran. Therefore, the researcher suggests testing the tools and proposed framework in different organisations with different fields, such as the airline industry. Also, the framework could be tested in other developing countries and even developed countries to assess the feasibility of this framework and tools. This would help to assess the cultural differences and enhance eCRM success and effectiveness.

7.7 Conclusions

The benefits of this research are generated from the usefulness of this study to the academic and business fields. This research provides a review of the literature on eCRM readiness and maturity.

This provides invaluable insight regarding eCRM success and failure factors. Furthermore, due to the gap in the existing literature, this research extends the line of knowledge by developing eCRM readiness and maturity framework and proposes an assessment tool. With regard to the business field, the proposed tool can provide decision makers with a set of guidelines for their actions. In addition, it gives employees to become more aware of issues and allow them to understand the impact of eCRM.

The findings of this study illustrated that bank's eCRM strategy, bank's culture, and technology are important dimensions for eCRM readiness and maturity. The infrastructure, knowledge management, awareness, employee's resistance to change, IT policy, top management support, training, and social eCRM factors can be considered for eCRM readiness and maturity assessment. By utilising these findings, managers would be better able to understand the crucial dimensions and factors for eCRM deployment.

On the other hand, based on this result the assessment tool was created. This tool is based on AHP and RADAR logic approaches to provide a high degree of awareness of eCRM implementation and its status in banks. The eCRM readiness and maturity of Iranian banks were evaluated using this tool that comprises all necessary items to evaluate readiness and checks the maturity level. As mentioned, all factors or items (measuring constructs) are under different dimensions.

Therefore, the result of this study helps banks to organise their eCRM strategy and improve their maturity level which is vital for eCRM success. Bank's decision-makers would be able to recognise their weaknesses and improve that area. Furthermore, the findings of this research provide a valuable and practical resource for those researchers wishing to make further investigations into eCRM readiness and maturity.

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Appendix

Interview question

1. What is CRM/eCRM? What is your definition?
2. Do you have any CRM/eCRM strategy for your bank?
3. How do you choose your CRM/eCRM software?
4. How often update your software?
5. What are the legal issues in the deployment of eCRM?
6. How is the IT infrastructure in your organisation?
7. What about the integration of eCRM with IT infrastructure?
8. How track your important customers?
9. Do you think eCRM deployment needs training?
10. What is the obstacle for training?
11. What is the main problem for eCRM implementation?
12. How do you overcome employee's resistance?
13. Which factors are important in assessing eCRM in your bank?

A) Corporate Strategy
B) Organizational culture
C) Use of technology

14. What are the benefits of eCRM implementation?
15. How customer data distribute in your bank?
16. How track and review your communications with your customers?
    A) Call centre
    B) Contact management software
    C) E-mail
    D) Other

17. Where do you store your customer information?

18. How many employees do you have and how many of them are in contact with customers on a daily basis?

Codebook

Questions	Name	Label	Values
Q1	stra1	strategy dimension (goals factor)	1= strongly disagree
Q2	stra2	strategy dimension (goals factor)	2= agree
Q3	stra3	strategy dimension (goals factor)	3= neutral
Q4	stra4	strategy dimension (goals factor)	4= agree
Q5	stra5	strategy dimension (goals factor)	5= strongly agree
Q6	stra6	strategy dimension (goals factor)	
Q7	stra7	strategy dimension (strategy factor)	
Q8	stra8	strategy dimension (strategy factor)	

Q9	stra9	strategy dimension (strategy factor)
Q10	stra10	strategy dimension (strategy factor)
Q11	stra11	strategy dimension (strategy factor)
Q12	stra12	strategy dimension (strategy factor)
Q13	stra13	strategy dimension (strategy factor)
Q14	stra14	strategy dimension (strategy factor)
Q15	stra15	strategy dimension (overall plan factor)
Q16	stra16	strategy dimension (overall plan factor)
Q17	stra17	strategy dimension (overall plan factor)
Q18	stra18	strategy dimension (overall plan factor)
Q19	stra19	strategy dimension (overall plan factor)
Q20	stra20	strategy dimension (overall plan factor)
Q21	stra21	strategy dimension (IT policy factor)
Q22	stra22	strategy dimension (IT policy factor)
Q23	stra23	strategy dimension (IT policy factor)
Q24	tec1	technology dimension (infrastructure factor)
Q25	tec2	technology dimension (infrastructure factor)
Q26	tec3	technology dimension (infrastructure factor)
Q27	tec4	technology dimension (infrastructure factor)
Q28	tec5	technology dimension (infrastructure factor)
Q29	tec6	technology dimension (infrastructure factor)
Q30	tec7	technology dimension (number of channels factor)
Q31	tec8	technology dimension (number of channels factor)
Q32	tec9	technology dimension (number of channels factor)
Q33	tec10	technology dimension (number of channels factor)
Q34	tec11	technology dimension (number of channels factor)
Q35	tec12	technology dimension (integration between channels factor)
Q36	tec13	technology dimension (integration between channels factor)
Q37	tec14	technology dimension (integration between channels factor)
Q38	tec15	technology dimension (knowledge management factor)
Q39	tec16	technology dimension (knowledge management factor)
Q40	tec17	technology dimension (knowledge management factor)
Q41	tec18	technology dimension (human resources factor)
Q42	tec19	technology dimension (human resources factor)
Q43	tec20	technology dimension (human resources factor)
Q44	cul1	culture dimension (employee skills)
Q45	cul2	culture dimension (employee skills factor)
Q46	cul3	culture dimension (employee skills factor)
Q47	cul4	culture dimension (resistance factor)
Q48	cul5	culture dimension (resistance factor)
Q49	cul6	culture dimension (awareness factor)
Q50	cul7	culture dimension (awareness factor)
Q51	cul8	culture dimension (awareness factor)
Q52	cul9	culture dimension (management support factor)
Q53	cul10	culture dimension (management support factor)
Q54	cul11	culture dimension (management support factor)
Q55	cul12	culture dimension (management support factor)
Q56	cul13	culture dimension (management support factor)
Q57	cul14	culture dimension (management support factor)
Q58	cul15	culture dimension (training factor)
Q59	cul16	culture dimension (training factor)
Q60	cul17	culture dimension (training factor)
Q61	readiness1	readiness dimension
Q62	readiness2	readiness dimension
Q63	readiness3	readiness dimension
Q64	readiness4	readiness dimension
Q65	readiness5	readiness dimension

Q66	readiness6	readiness dimension
Q67	readiness7	readiness dimension
Q68	readiness8	readiness dimension
Q69	readiness9	readiness dimension
Q70	readiness10	readiness dimension

RADAR Logic questions

Knowledge management

- Knowledge acquisition and application

  R: bank is aware of knowledge acquisition importance for e-CRM success
  A: bank planned for knowledge acquisition
  D: bank established processes to acquire knowledge about customers for example by providing communication channels
  A&R: bank assesses the knowledge acquisition by using measurement frameworks or tools

- Knowledge diffusion:

  R: bank is aware of knowledge diffusion importance for eCRM success
  A: bank has a clear plan and strategy for knowledge diffusion
  D: bank deployed knowledge diffusion strategy by encouraging staff to share knowledge and design processes to facilitate knowledge transmission between employees and different functional areas
  A&R: bank assesses the knowledge diffusion efficiency by different methods such as weighted collaboration network model

- Employee knowledge

  R: bank is aware of the importance of employee knowledge for e-CRM success (increase revenue and decrease costs)
  A: bank has plan and strategy for employee knowledge
  D: bank deployed employee knowledge strategy (consistent training, reward progress) which helps them for sales practices or client care insight
  A&D: bank measures employee readiness for knowledge management using surveys (ask them to teach what they have learned) or tools to measure professional development

- Knowledge review and revise

  R: bank aware that knowledge evaluation is an essential process of knowledge management
  A: bank planned for knowledge evaluation in order to achieve e-CRM success
  D: bank deployed knowledge evaluation strategy
  A&D: bank evaluates by a valuation of intangible assets, assessment of knowledge management systems or other types of evaluation such as evaluation of activities that take place in each phase of the knowledge cycle

Technology

Technology integration

R: bank aware of technology importance which has a vital role in communication between the bank and customers

A: bank planned and developed its technology strategy to use of technologies within the bank
A: bank eCRM strategies dictated the analytical, operational, and collaborative eCRM integration
D: bank integrated latest and advanced technologies across the different functional areas in order to the betterment of eCRM objectives
D: bank has right technical staff support, hardware, software, information systems, and database for building customer relationships
A&R: bank monitors and evaluate the integration of technology with analysing the customer satisfaction and sales/revenues boost's rate

Operational eCRM

R: bank aware of operational eCRM which facilitate and streamlines communication with customers, and connects to customer touch points
A: bank planned for services that provide support for various "front office" business processes in helping the bank to take care of its customers
D: bank deployed sale-force automation, service automation, marketing automation, data aggregation systems, websites, contact or call centres
A&D: bank assess different operational metrics to measure their related performance (sales, marketing, service)

Analytical eCRM

R: bank aware of the importance of analytical eCRM in order to analysis and systematic evaluation of customer data using business intelligence which can lead to eCRM success
A: bank planned for supporting analytical back-office operations and analysis which are the operations and processes that are not dealing directly with customers
D: bank implemented customer, marketing, sales, service, and channel analytics to tackle customers based on values, determine which customer is best to invest, and customer segmentation
A&R: bank assess and refine it analytical eCRM as a predictive modelling tool (compare future successes based on the customer knowledge database) in order to better and more productive customer relations by monitor and analysis of results achieved

Social eCRM

R: bank aware of importance of social eCRM to optimise the power of social interactions to get closer to customers
A: bank has a clear social eCRM strategy to improve its customer service

D: bank implemented social eCRM strategy by using social media services, techniques and technology to enable the bank to engage with its customers such as Facebook or Twitter
A&R: bank assess social eCRM by monitoring and analysing quality and relevance of content, engagement level, sentiment measure, track social media return on effort and different performance measures for social eCRM

Communicational channel

R: touch points are important because customers form perceptions of our bank and brand based on their cumulative touchpoint experiences
R: effective internal communication is vital to employee engagement and morale that lead to motivation, productivity, loyalty, and retention
A: bank has a plan for communicational channels deployment and develops required channels
A: bank chooses right communication channel to support the business objectives that bank trying to achieve
D: bank deployed the right communicational channel based on stakeholders
D: bank developed content to determine the messaging
A&R: bank evaluates the communication process over time to ensure productivity gain
A&R: bank introduced a feedback loop for end users in a different form to learn from issues that may arise

Analytics

Data analytics

R: bank aware the importance of data analytics to tailor product/services and associated marketing material to individual customers' needs
R: bank aware of the data analytics importance as an automated methodology of processing data about a customer in order to make better business decisions
A: bank planned for data analytics to provides closed-loop visibility to customer behaviours and interactions throughout the entire customer lifecycle
D: bank deployed data analytics plan to get the information they need to interact with their customers based on their needs
D: bank deployed the selected tool to transform raw data into business insight to better predict
D: bank created an inventory of data sources after identifying what data is needed such as Excel spreadsheets, email and groupware systems or a content management system (CMS)
A&R: bank tracks employee or departmental performance to measure the effectiveness of data
A&R: bank developed KPIs unique to its organisational goals to be able to tie performance to business goals

Data quality & management

R: bank aware that data quality is the cornerstone of eCRM and reduce costs, increase sales, improve customer satisfaction, and make better bank decision
A: bank has clear data quality & management strategy to support its investments in eCRM solutions
A: bank has a process to routinely dispose of personal data that is no longer required in line with agreed

timescales
D: bank deployed data quality software to enable them to clean, manage, and make available reliable data across the bank
D: customer reference data (name/address/city/email/postal code) across the bank is synchronised, integrated, and safely stored in central data warehouse
D: customer actively data (transactional/behavioural/financial) across the bank is synchronised, integrated and safely stored in a central data warehouse
D: a unique customer identifier (customer account) is used across all banks systems and databases

D: bank has established processes to ensure personal data is of sufficient quality to make decisions about individuals

A&R: bank assess its quality of data by measuring primary dimensions such as completeness, consistency, uniqueness, validity, and accuracy
A&R: bank has data quality evaluation tools to ensure high quality of data such as monitoring and evaluation systems to identify incomplete, inaccurate and tardy data

eCRM analytics tools

R: bank aware of the importance of eCRM analytics tools in order to better and quicker decision
A: bank has clear eCRM analytics plan to use applications to evaluate bank's customer data to boost customer knowledge
D: bank implemented e-CRM analytics tools in order to forecasting, segmentation, real-time analysis, benchmarking, and visualisation
A&R: bank assess its eCRM analytics by monitor and analysis of results from direct customer feedback, bird's eye view of the customer, track engagement levels, measure and monitor escalation, and gauge customer lifetime value (LTV)
A&R: bank measures eCRM analytics by actively tracking staff utilisation of the BI tools, for example, tracking who is accessing the tools and the volume of the users over time that can provide early indicator towards ROI

Security

R: bank concerns about data security which can raise red flags for decision makers
A: bank prepared for the inevitable security breach and focus on protecting sensitive data
A: bank has a plan in case of suffering from an outside breach
A: bank aware that storage and security can strengthen one another
A: bank has an information policy supported by appropriate security measures
D: bank is stored data in redundant regional data centres, so a problem at one data centre will not cause downtime or lost data
D: bank established a highly secure, encrypted connection between the servers and the point of use by using the latest Transport Layer Security (TLS) and Secure Socket Layer (SSL) protocols
D: bank is used a multi-layered and tiered approach to ensure data security is not breached due to the user errors
D: bank deployed a multi-tiered approach to user security
D: bank has a real-time backup of all information stored on the servers
D: bank provides data protection awareness training for all staff
A&R: bank monitors data infrastructure from a security point of view

A&R: bank uses monitoring tools to data leakage prevention diligently

Organisational culture

Employees

R: bank aware of employee's importance in eCRM success
R: bank aware of the importance of training as an ongoing process
A: bank planned for appropriate training for client-facing staff
A: bank defined the needs of the bank by identifying weak areas
A: bank allocated budget and resources to eCRM enabling technology end-user training & support
D: bank has mandatory training courses and also good communication with its employees during eCRM implementation
D: bank has experienced staff in place to provide eCRM enabling technology training, support, and administration
D: bank has a clear knowledge transfer plan from the eCRM implementation consultants to the front-line managers who are responsible for training post-implementation
A&R: bank measure and reward employee's performance on the basis of detection of customer needs and satisfaction with service received
A&R: bank has an evaluation of training effectiveness which leads to decision-making and planning for future training
A&R: bank assess employees' performance for example by comparing an employee's performance with the performance of other employees (Numeric rating) which provides evidence of non-discriminatory promotion, pay, and recognition processes

Management commitment

R: bank aware of the importance of top management support to prevent eCRM failure
A: senior management have a clear eCRM vision, mandate, objectives, and roadmap with milestones and delivery dates
A: top managers planned for assigning key employees throughout eCRM processes
D: senior management is dedicated to improving customer service and support across the bank
D: top managers committed of resources for employee's education and training
D: bank managers provide adequate financial, human, and technical resources to ensure the success of eCRM across the bank
A&R: bank assesses the management commitment by a level of management involvement as an indicator
A&R: bank conducts an audit by interviewing the management to collect the evidence of commitment and awareness

Change management

R: bank aware of the importance of change management that play a critical role in bank' ability to implement eCRM effectively
A: bank has a clear change management strategy to ensure that any adverse effects of the change will be

minimised
D: bank embrace the new ways of doing things and minimise user resistance
A&R: bank assess change management effectiveness through individual employee assessment, project performance metrics, and change management activity effectiveness

Customer-centric orientation

R: customers are firmly focused on by all functional departments within the bank
A: customers drive our bank planning, decision-making and strategy
D: customers profile has been developed, documented and distributed to sales, marketing, service and product management functions
D: customers that deal with multiple staff and/or departments do not have to repeat information to each department's staff members to have their issued resolved
A&R: bank has robust loyalty/reward/retention programs in place to increase customer retention rates

Employee's satisfaction

R: bank aware of the importance of employee's satisfaction
R: the level of employee's engagement is high in the bank
A: bank planned to improve the satisfaction level and aware of proven ways to boost employee's satisfaction
D: bank improved employee satisfaction by giving employees more control, create a wonderful environment, rewards, or any other ways to boost the satisfaction level
A&R: bank assesses the staff satisfaction with simple and efficient ways such as suggestion box, performance review or anonymous employee surveys

Strategy

Relationship management strategy

R: bank aware of the importance of relationship management strategy for eCRM success
A: bank developed its relationship management strategy
D: bank has a profound understanding of the types of customers that they serve, their value, and how they differ from each other and other customers from another target market
A&R: Bank assess the feasibility of its strategy by checking resources and personnel (capabilities assessment)

Customer strategy

R: bank aware of the importance of customer strategy for eCRM success
A: bank planned to identify and target customers for differentiated treatment based on behavioural, attitudinal, and financial characteristics
D: bank has a clearly articulated strategy for how to acquire, grow, retain and value our customers
D: we make relationship investment decision based on the customer's lifetime value
A&R: in order to determine if a strategy we have developed is leading the bank to meet its aims and objectives, the bank has evaluation techniques such as performance measurement or internal forces (financial assets, people)

Value creation strategy

R: bank aware of the importance of creating a value proposition for customers which is superior to and more profitable than those of competitors
A: bank has a structured method for developing value propositions
D: bank formulated the value proposition which involves defining the target customers, the benefits offered to these customers, and the price charged relative to the competition

A&R: bank improved value assessment using realistic evaluation of customer value such as conjoint analysis or trade-off analysis

Vision

R: there is a general trend in the bank to adopt eCRM as business philosophy, discipline and strategy
A: senior managers agree that eCRM will help to achieve future banks goals and objectives
D: each functional department has documented clear eCRM goals, objectives and deliverables
A&R: bank has different methods in order to develop its vision such as encourage employees to suggest all of their ideas or check how they meet their vision

Measurement

Customer satisfaction measurement

R: bank aware of customer satisfaction measurement importance for achieving eCRM success
A: bank planned and focused on measuring customer satisfaction
D: bank measures customer satisfaction
D: bank has a net promoter score to monitor "moment-of-truth" customer satisfaction
D: bank has a continuous customer satisfaction survey program that monitors the health of customer's attitudes and relationships
A&R: bank follow up on the results of customer satisfaction surveys and implement feedback across the bank where appropriate
A&R: bank has a tiered customer support system and effectively escalate and resolve customer issues promptly

Customer loyalty

R: bank aware of the customer loyalty importance measurement for e-CRM success
A: bank planned for customer loyalty and retention strategies
D: bank deployed customer loyalty programmes
A&D: bank measures the ratio of repeat purchasers over one-time purchasers
A&D: bank has different metrics for measuring customer loyalty such as customer engagement numbers, customer loyalty index (CLI) or an upselling ratio
A&R:

Performance measurement

R: bank aware of performance measurement importance for e-CRM success
A: our bank's strategy and business performance measures are in aligned with overall bank's goals
D: our bank has multi-directional and cross-functional communication consistently takes place within our bank which is crucial for establishing and maintaining a successful performance measurement framework
A&R: our bank has implemented a disciplined and rigorous performance measurement methodology and system that consistently tracks, measures and reports business, customer and campaign KPIs

Process

eCRM processes in marketing

R: bank aware of the importance of eCRM processes in marketing which improve the productivity of the marketing department
A: bank planned to get a better understanding of their customers by employing best practice processes for efficient marketing automation
D: bank has adequate tools such as customer database segmentation, marketing campaign management, email marketing tools, lead management and distribution or collaboration tools
A&R: bank evaluates marketing performance using KPIs or returns on investment (ROI)

eCRM processes in sales

R: bank aware of the importance of eCRM processes in sales which make the most of the sales pipeline and minimise errors
A: bank planned for implementing automated business processes that guide them through the most effective actions to close more deals faster
D: bank equipped with social media integration, sales forecasting tools, opportunity management, document management, mobile sales capabilities or social media integration tools
A&R: bank evaluates sales performance using eCRM tools

eCRM processes in service

R: bank aware of eCRM processes in service importance for eCRM success
A: bank planned for deploying the eCRM processes in service to deliver a superior customer experience
D: bank deployed contact centre automation, service level management, 360-degree view of the customer database, case and indecent management, and omnichannel communication tools
A&R: bank evaluates service performance using customer feedback analysis, listen to calls, talk to employees, or customer service metrics